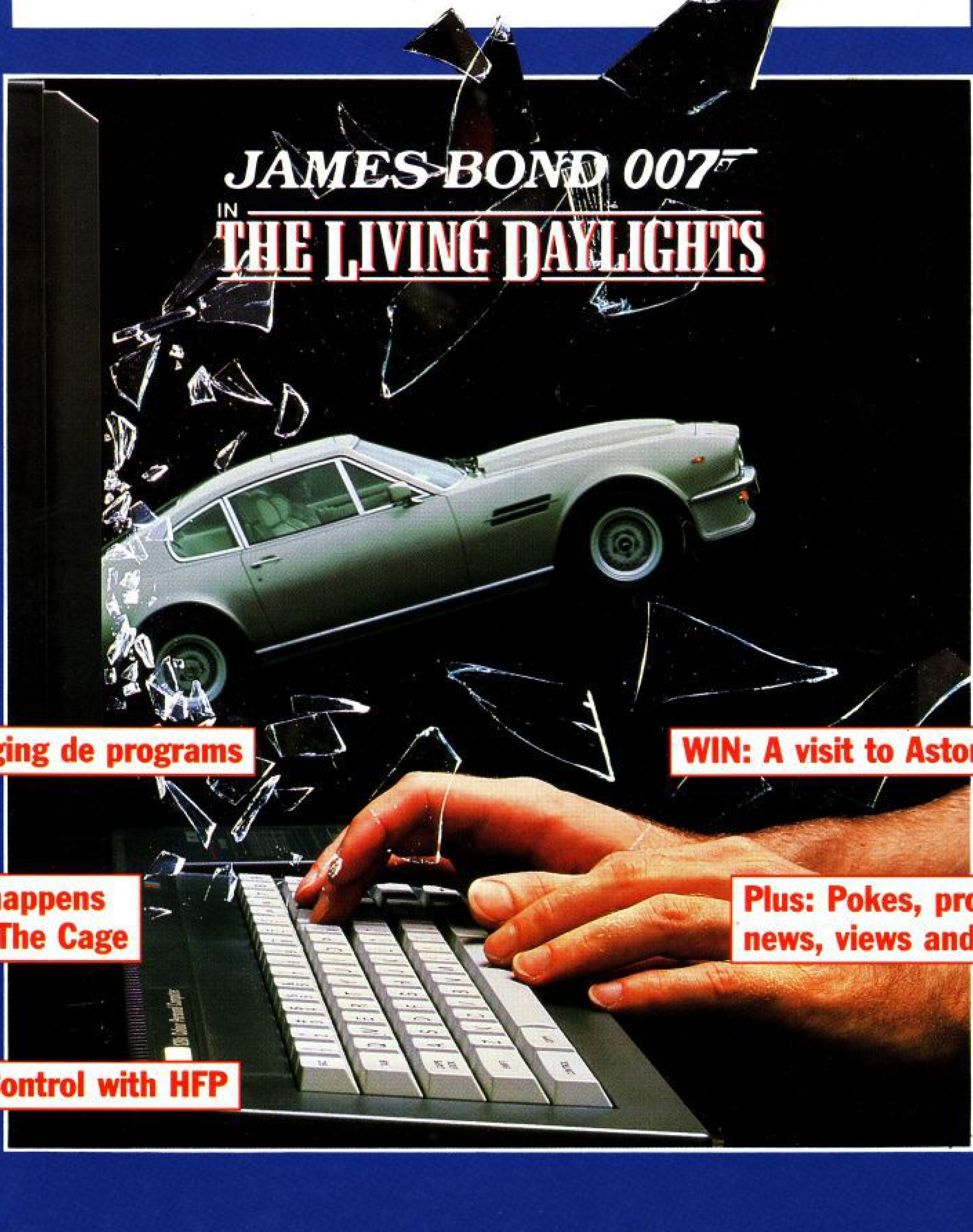
September 1987 £1.00

AMSTRAD COMPUTER USER



Debugging de programs

WIN: A visit to Aston Martin

What happens inside The Cage

Plus: Pokes, programs, news, views and reviews

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Official Amstrad Home Computing Magazine

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Denmark Kr. 31.00
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MASTERFILE III

FOR THE AMSTRAD CPC 6128 (ALSO CPC 464/664 WITH DK 'TRONICS 64K RAM)

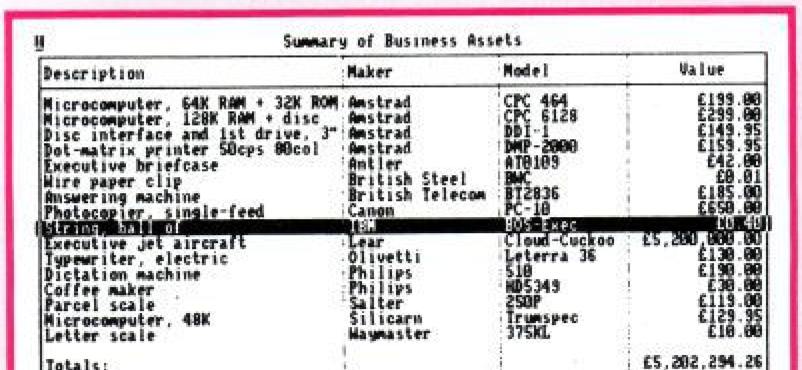
FIRMLY ESTABLISHED ...

MASTERFILE III is now firmly established as THE filing system for the CPC6128. It has received rapturous reviews and we could paper the walls of our new offices with our customers' letters of appreciation.

For the benefit of newcomers to the CPC machines: MASTERFILE III is a powerful and flexible data filing and retrieval system. All "database" systems require that your data is organised into fields and records. Unlike most, MASTERFILE does not commit you to field lengths or formats, since ALL data is variable-length and optional. Files are not pre-formatted, and only used bytes are saved to disc. Also, unlike the rest, MASTERFILE allows multiple user-defined ways of viewing/printing your data. And unique in its price range, MASTERFILE offers RELATIONAL FILE options, whereby common data can be entered just once and shared by many records. Maximum field size is 240, maximum fields per record is over 50, and maximum file size is 64K. Room for 1,000 full names and addresses, for example. Only one disc drive is required. It is menu-driven throughout, and comes with detailed illustrated manual, and example files.

SO VERY VERSATILE ...

Just about ANY kind of information can be handled by MASTERFILE. You can EXPORT the data to other systems (e.g. PROTEXT/MERGE and TASWORD). You can even merge your own USER BASIC to MASTERFILE for customised file processing, or build new files from other computer sources. The speed of SEARCH of MASTERFILE is second to none. Records can be sorted ascending/descending, character or signed numeric, even embedded keys such as surnames. Other functions are field-to-field calculations, and several-across label printing. We simply don't have room to list all the features; give us a call if you are still in doubt of the power of MASTERFILE III.



Summary of Business Assets

Description	Maker	Model	Value
Microcomputer, 64K RAM + 32K ROM	Amstrad	CPC 464	£199.00
Microcomputer, 128K RAM + disc	Amstrad	CPC 6128	£299.00
Disc interface and 1st drive, 3"	Amstrad	DDI-1	£149.95
Dot-matrix printer 50cps 80col	Amstrad	DMP-2000	£159.95
Executive briefcase	Antler	AT0109	£42.00
Wire paper clip	British Steel	BWC	£0.01
Answering machine	British Telecom	BT2836	£185.00
Photocopier, single-feed	Canon	PC-10	£650.00
String, ball of	[illegible]	DOS-Exec	[illegible]
Executive jet aircraft	Lear	Cloud-Cuckoo	£5,200,000.00
Typewriter, electric	Olivetti	Leterra 36	£130.00
Dictation machine	Philips	510	£190.00
Coffee maker	Philips	HD5349	£30.00
Parcel scale	Salter	250P	£119.00
Microcomputer, 48K	Silicarn	Trumspec	£129.95
Letter scale	Waymaster	375KL	£10.00
Totals:			£5,202,294.26

Top record = 0001   [H] for menu

File: FILE2   Records:0016   Selected:0016   Parents:0000   RAM used:02K from 64K

ALL THIS POWER ...

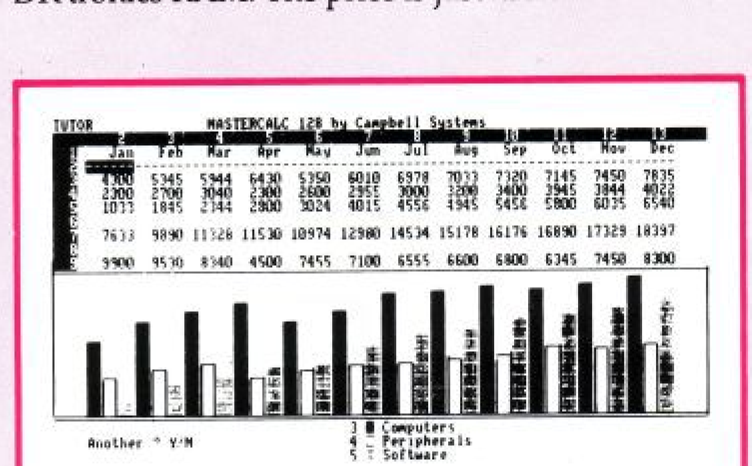
This is no toy thrown together in BASIC and half-tested, but real machine-coded computing power professionally constructed. We have had IBM and Apricot users beg us for a MASTERFILE for their machines — when they had seen the earlier CPC MASTERFILE. All this power is yours for ... **£39.95**.

For those who already have an earlier MASTERFILE, we offer updates; please telephone for details. You will be amazed at the performance improvements and extra functions.

★★★ PCW users: be patient, MASTERFILE 8000 will be ready early in 1987 ★★★

MASTERCALC 128 SPREADSHEET

We also have one of the fastest and friendliest spread-sheet programs around, MASTERCALC 128. Its special features include: individual tailoring of column widths and precision; relocatable formulae; split-screen option; automatic cursor advance; text output to printer, or to disc for interface with PROTEXT or TASWORD; hi-res graphic histogram of any three rows. MASTERCALC 128 runs on CPC6128, or CPC464/664 with DK'tronics RAM. The price is just **£33.00**



SPECIAL OFFER

You can save £10 by taking MASTERFILE III and MASTERCALC 128 for a combined price of just **£62.95**.

Prices include VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems". Our normal response is return of post, 1st class.

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AMSTRAD COMPUTER USER

The official magazine for all users of Amstrad computers

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Bargain bonanza

THE seventh Amstrad Show kicked off at Alexandra Palace in glorious sunshine. Despite the soaring temperatures inside and outside the hall, the first day's attendance was double that of any previous Amstrad Show.

Jostling in the aisles with the indigenous population were a surprisingly large number of overseas visitors – notably from Spain, Germany and Italy.

There was even a representative from the official Chinese news agency prowling among the stands. And at least one Coronation Street star was sighted among the milling throng.

Star of the show was the PC 1640 ECD, the new high resolution IBM compatible from Amstrad.

The crystal clear text had visitors yearning for one while the computer was still booting up. A graphics demo showed a number of startling pictures, including one of the Alexandra Pavilion in which the show was held.

At a time when most new products are aimed at the PC and PCW, it was heartwarming to see how much support there still is for the CPC.

AMX had the MAX rom available, along with the new Swiss mouse. An unusually subdued demonstration emanated from Mike Beecher on the Electro Music Research stand and its Midi interfaces and synths. The EMR stand always sounds impressive, even with the volume set to appease neighbouring exhibitors.

Arnor announced Protext for the PC1512, "It should be ready in five weeks", claimed Dave Fisk. They have also cut the price of a couple of CP/M plus programs.

Pocket Protext offers Protext – without spell checking or mailmerge – for £49.95, and Maxam II (as reviewed a few months back) has also come down to £49.95, to cause a showdown with Devpac 80 version 2.

Romantic Robot, master of clever hardware design, showed a new disc operating system for the CPC. This supports larger disc drives, a print spooler and a ram disc among its myriad functions.

Look out for a review soon. It is expected to be a real hit with serious Arnold users.

Ian Hoare demonstrated his new communications rom for the CPC, a menu-driven viewdata terminal.

The software makes Prestel a joy to use, offering automated messaging, superb editing which includes word wrap (a feature Ian was surprised that no-one else included since it only took 150 bytes), cut and paste functions and a pixel pad for graphics.

Ian was giving a disc with an early version of the software to anyone who placed a deposit on the rom, which will cost about £35. For more details call him on 01-965 8957.

As usual the show was a bargain buyer's dream, with lots of good deals on software and blank discs. And the new venue has proved a popular choice.

"This is the first time an Amstrad Show has been held at Alexandra Palace – a move dictated because we outgrew our previous location", said a spokesman for the show organisers, Database Exhibitions. "We came here because it was a much bigger stage for this prestige event – but we could have done with at least twice as much room again.

"One thing's for sure – this show is an even bigger bonanza for Amstrad users and suppliers than any previous event in the series".

The eighth Amstrad Show opens on October 23 – in Manchester. Details on Page 9.

Logical choice

THE fiendishly frustrating, yet totally logical maze game Xor is now available for the Amstrad CPC series.

It comprises 15 levels of problems in which the player has to negotiate his way around a series of puzzles which require a combination of logic, strategy and experience to solve.

If that sounds complicated, it is – but Xor is also both compulsively playable and intellectually stimulating and can interest youngsters as well as adults with its chess-like qualities.

It costs £14.95 on disc, £9.95 on cassette from Logotron (0223 323656).

One head good, four heads better

A FAST dot matrix printer which is claimed to combine top quality with low cost has been released by Precision Distribution.

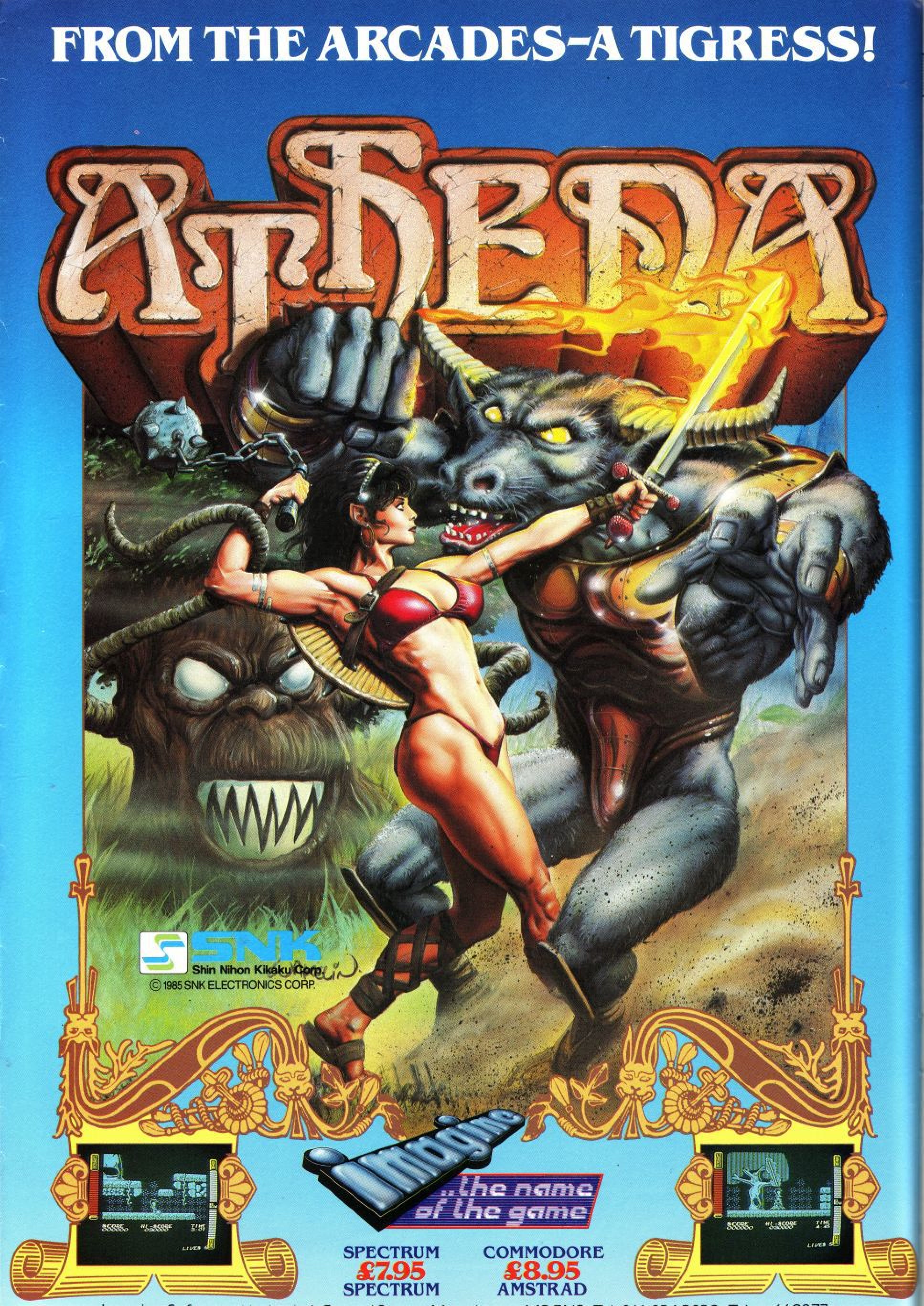
The speed of the Precision 4010 at 252 lines a minute in draft mode and 55.8 lines a minute for near letter quality is the result of four print heads.

IBM and Epson modes are available with a choice of nine fonts and high resolution graphics. A Centronics interface, is standard, as is an 8k print buffer. The machine will have a basic price of £369.

Two special bundled packages are on offer: Superbase Personal the relational database from Precision with GEM and a mouse; or WordPerfect Executive, the combined word processor, spreadsheet and library. Each bundle costs £469.

The Precision 4010 is the first hardware product bearing the company's own name badge.



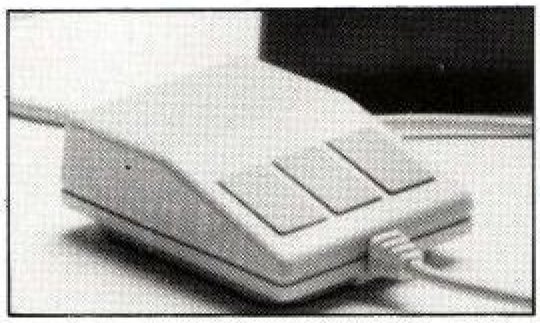

FROM THE ARCADES–A TIGRESS!
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Shin Nihon Kikaku Corp.
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imagine
...the name of the game
SPECTRUM
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SPECTRUM
COMMODORE
£8.95
AMSTRAD

Two releases from AMX

ADVANCED Memory Systems, mouse breeders to the computer industry, have two new products. MAX is a WIMP (windows, icons, mouse and pointer) front end for CPC disc systems. It should make using the Amstrad disc system a doddle. Just point to the function you want with the mouse and press for action.

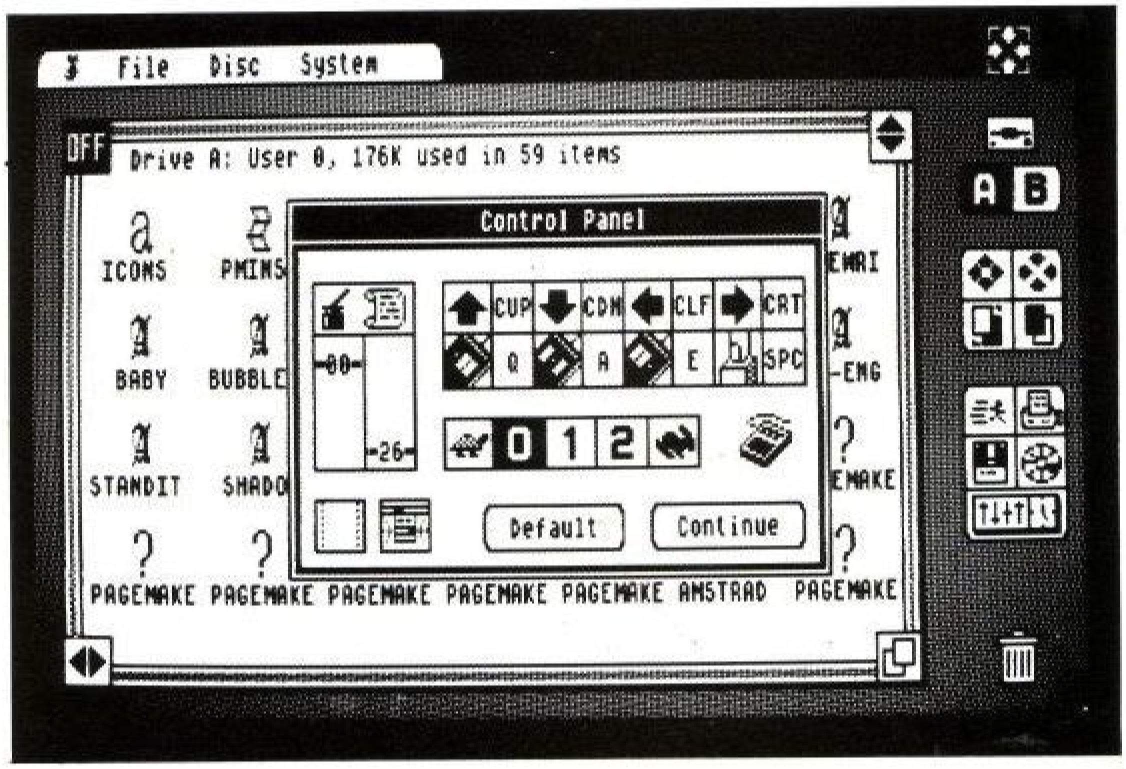
The second new AMX offspring is the AMX mouse Mk III, claimed to be the best mouse yet. It has an accuracy of 250 dots per inch and, according to AMS "superior ball technology".

These are the supposed benefits of the finest Swiss precision design. Made of plastic it looks pretty sleek, but is obviously not aimed at the yuppie



market or they'd have carved the case out of an Alp. For further details contact AMS on 0925 413501.

A third new product from Nick and Julie Pearson at AMS is in a production run of one. Congratulations to both on the birth of a baby boy.



Latest printer from Amstrad

THE next number in the series 1, 2000, 3000, 4000 is 3160. The new printer from Amstrad is the DMP 3160, the 160 denoting the speed.

Based on the DMP 3000, and looking exactly the same, at £169 Amstrad's new printer is the same price as the old one but contains fewer chips and prints a good deal faster.

Both the 3000 and 3160 will work with a CPC, but are really designed for use with a PC since they have a full IBM character set and a PC printer lead.

Free Shade this summer

DRUG pushers are known to give free samples to trap the innocent. Then once they are hooked they can't stop.

Micronet has adopted this ploy for Shades, the multi-user adventure on Prestel. Shades usually costs around £1 an hour, but Micronet are offering the first five hours free. You will still have to pay the phone charges and the regular Prestel on-line charges but at least the adventure is free – that is until your five hours run out.

Then you won't want to waste all the effort you've spent building up a character so you will start to pay to play. All you need is a modem and the kind of nature that enjoys decapitating orcs.

New online directory

ENHANCING its reputation for providing user-friendly services not found on other electronic mail systems, MicroLink has come up with another unique innovation.

Its new online directory means subscribers now have the UK's most sophisticated and comprehensive user list at their fingertips.

For the first time on a commercial database they can update their own entries, list their interests and search out others with similar hobbies.

Brand new, specifically tailored software speeds the search and locate procedure and reduces online time.

The new search facility covers all entry fields – names, occupations or activities, geographical location and leisure pursuits.

Users can quickly locate details about other MicroLink subscribers in specific occupations or towns, or find out who shares their hobbies.

But the major advantage for everyone is the opportunity to keep their directory entry current by keying in new information whenever a name or address changes.

Competition winners

CONGRATULATIONS to the winners of Amstrad Computer User competitions over the last few months. They were;

Vidi Competition: Mr Andrew Skinner of Exeter.

Scalextric Competition: Philip Newman, Bishop's Stortford.

Runners Up: Michael A. Prescott, Liverpool; R.A. Nicholls, Petersfield; Mark Bryant, Worcestershire; Craig Mathieson, Brighton; M.W. Wabe, Kinloss; C.G. Fry, Cumbria; James Macarthur, Crowthorne; Matthew Wright, Ravensfield; Gary Evely, Street; Richard Brown, Bromley; Chris Holland, Oxford; Helen Richards, North Yorks; Mike Dexter Manchester; Robert Perry, Bucknall; Martin Young, Glasgow; Emma Tndall, Kent; Simon Davies, Cornwall; Thomas Cunning, Glasgow; Stephan Haisley, Witney; David Rogers, Tiverton; Brett Shaw, Lowestoft; Nick Lygo-Baker, Aylesbury; S.M. Weaver, Lymington; Anthony Guy, Bristol; Stephen Causer, Wiltshire.

Football competition: Trevor Martin, Surrey; Matthew Letts, Reading; Damian Fearnley, Weybridge; Colin Hayward, East Sussex; Jon Kristion, Anstey R. Barry Anstey St. Helier; J.A. Paddock, Wrexham; Paul Hoffman, Surrey; M.J. Boulter, Lutterworth; Mr A. Parekh, East Sussex.

Pace competition: Maria Banks, Aylesbury; Paul Hewson, Wallington; T.C. Ward, Rotherham.

ROMANTIC ROBOT *present*




A: Basically to make back-ups of programs on a CPC 464, 664 or 6128 and also to enable you to study, alter and customize them.

Q: OH, DO I NEED TO UNDERSTAND THE PROGRAMS OR EVEN ALTER THEM TO MAKE BACK-UPS?
A: NO! – NOT with the MULTIFACE TWO – it is in fact the ONLY product on the market which works FULLY automatically. You load any program as usual, run it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?
A: YES! It works a treat and it could not be easier. The menu gives four basic options – to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines – invaluable for hackers) and **TOOL** to access the MULTI-TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it, **SAVE** it again, etc.

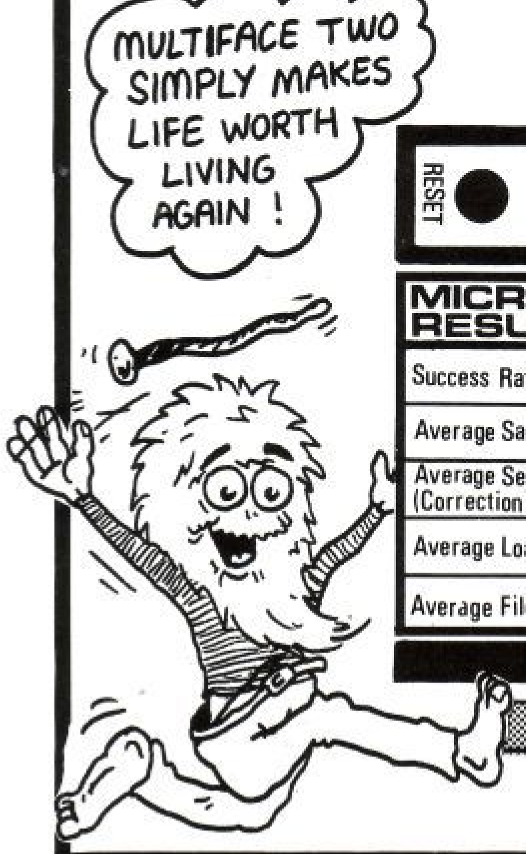
Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?
A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware – thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored. NOTHING else can do this and on all other devices you will need to try to restore the screen: its modes, colours, windows, etc. – this takes quite some time and effort and the failure rate is high...

Q: OK, SO MULTIFACE CAN COPY FROM TAPE TO DISC, BUT CAN IT ALSO COPY FROM TAPE TO TAPE OR DISC TO DISC OR DISC TO TAPE?
A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time: it does not matter whether it was originally loaded from tape or disc or even typed in, so all combinations are possible.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?
A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy any program at any stage – no software-based copier can in principle ever do that. Any tape/disc copier will just try to copy a tape as it is – if there are unorthodox leaders, speedlocks, protections against copying, etc., you'll end up with a problem – but not with a back-up. If you wish to back-up any game at any point, be it upon loading or after going through the lenslock or half-way through, if you wish to poke infinite lives and then save, etc. – you just can't do anything like it with tape/disc copiers – you need the MULTIFACE!

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET – WHY SHOULD I BUT IT MORE THAN ANYTHING ELSE?
A: There are four devices on the market: Action Replay by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy – fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one – 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving – and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

The summary of MICRONET tests: "MULTIFACE TWO from ROMANTIC ROBOT wins easily on all features! It is faster, more convenient, more successful, uses less space and has more facilities!"



RESET ● multiface two ● STOP

MICRONET RESULTS	ACTION REPLAY	DISK WIZARD	IMAGER	MULTIFACE TWO
Success Ratio	20%	40%	50%	100%
Average Saving Time	33.4sec	44.5	36.6	32.5
Average Setting (Correction) Time	1.5min	17.5	6.6	zero
Average Loading Time	21.7sec	40.7	36.6	19.7
Average File Size	58k	89k	53k	49.k

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely fool-proof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

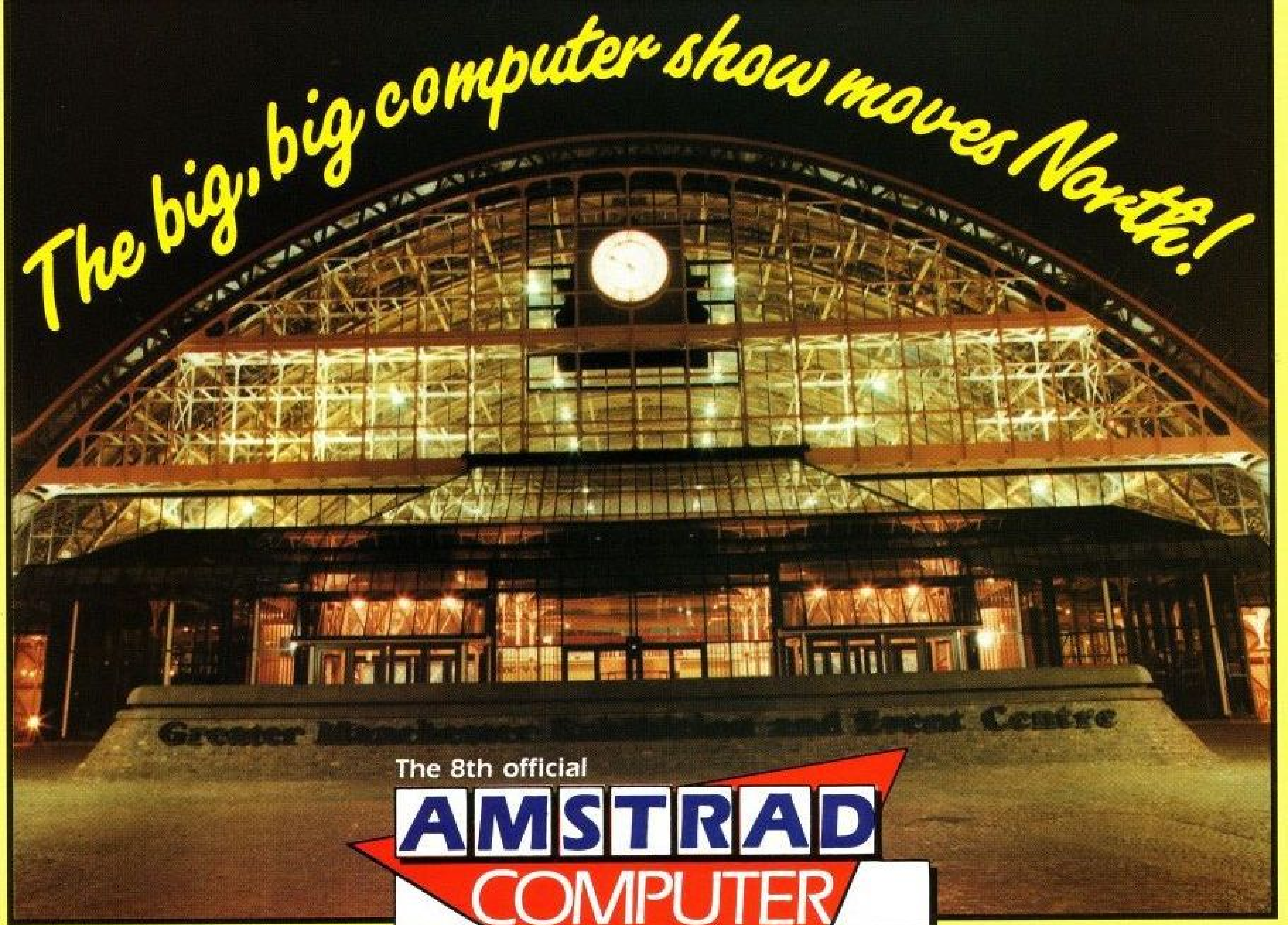
The special price of £42·00 applies strictly to mail orders received with the coupon below before the end of September 1987.

multiface two THE ESSENTIAL AMSTRAD CPC COMPANION

Please send me a MULTIFACE TWO at £42.00 plus p&p – UK £1.00, Europe £2.00, Overseas £3.00
I enclose a cheque PO for £............ or debit my No [__________] Card exp...........
Name & address ....

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The big, big computer show moves North!



The 8th official

AMSTRAD COMPUTER SHOW

10am-6pm Friday October 23
10am-6pm Saturday October 24
10am-4pm Sunday October 25

Organised by Database Exhibitions

G-Mex Centre, Manchester

The fastest growing computer show of them all is now moving North – to the most innovative, prestigious exhibition centre in Britain.

This magnificent building will play host to all the major companies in the Amstrad market – including Amstrad themselves, showing the complete range of machines.

Whether you own an Amstrad CPC, PCW or PC – or just thinking of buying one – there will be lots for you to see and enjoy

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We've set aside a huge area to meet the heavy demand for seats during the non-stop presentations. You'll see demonstrations of new products, hear about all the latest developments, and be able to grill the experts.

How to get there

Situated in the heart of the city centre, G-MEX is only one mile from the M602, and there's ample parking space beneath the hall.
Within easy reach of Victoria and Piccadilly railway stations.

THIS ADVANCED TICKET SAVES **£1** A HEAD – AND CUTS THE QUEUES

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Please supply:

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☐ Under-16s tickets at £1 (save £1) .... £..........

Total £______

☐ Cheque enclosed made payable to Database Publications Ltd.

☐ Please debit my credit card account

☐ Access ☐ Visa

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Admission at door: *£3 (adults), £2 (under 16s)*

Advance ticket orders must be received by Wednesday, October 14, 1987

AMSTRAD COMPUTER SHOW

THE G-MEX CENTRE MANCHESTER

October 23-25

POST to: ***Amstrad Show Tickets, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.***

Name...

Address...

....

..................Signed..................

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Please quote credit card number and full address + AC U9

GALLUP SOFTWARE CHART

Pos	Move	Title / Publisher / Price	Comment	Last month	Market strength
1	Up	**Ghost Hunters** *Code Masters* 1.99	A spooky game by the same programmers as Grand Prix Simulator. It will be interesting to see what happens with the full price games from Code Masters, due for a September launch.	RE	100
2	Non-mover	**BMX Simulator** *Code Masters* 1.99	Cycling simulator best played with a friend, a good, fun game with a low price. BMX may be on the decline, but the memory kind of lingers.	2	88
3	Down	**Grand Prix Simulator** *Code Masters* 1.99	The racing game for those who know their opposite lock from a four wheel slide. Super Sprint by any other name would still play as sweet. This is a bargain.	1	80
4	New entry	**Barbarian** *Palace* 9.99	Showing that sexisim is good for sales and a bit of a decapitation doesn't hurt the bank balance, Palace has exploited the fighting game theme with panache.	NE	78
5	Down	**Six Pak** *Hit Pak* 9.99	Proving that compilations are as popular as ever, this has scorched a trail into the chart and can be expected to hold on in there for some time.	3	55
6	Down	**Feud** *Bulldog* 1.99	First game on Mastertronic's new label. Chunky spirites and a mystic plot go to make up this 2D arcade game.	4	51
7	New entry	**Strike** *Mastertronic* 2.99	Isometric 3D 10 Frame-style game. Bowling seems to be the current games fad; this is probably better than the US Gold full pricer.	NE	50
8	Up	**Four Great Games** *Micro Value* 3.99	A cheapie compilation. To think that some people thought that budget software would see the death of the games industry. Still if they are such great games, why sell them at less that a quid each?	10	46
9	Down	**Big 4** *Durell* 9.95	Top notch compilation which has two excellent games, one good game and a totally new program. With this kind of value it is a surprise that Big 4 has tumbled so far from number 1.	5	45
10	Down	**Head over Heels** *Ocean* 8.95	Hours of entertainment make this a bargain. Deserves a top five place at least. Very difficult, but shows a good sense of humour. The next game from Jon Ritman will be a match of the day sequel.	8	43
11	Down	**Ninja** *Mastertronic* 1.99	The fist fiends fight on. This time with a more vicious trait and at a lower price. You have to fight off the hordes using a variety of weapons.	6	41
12	Up	**Army Moves** *Imagine* 1.99	The first Imagine game to result from a deal with the Spanish software house Dinamic. Bouncing buggies and 2D graphics.	15	39
13	Down	**Football Manager** *Addictive* 9.95	Just think if you hadn't bought Football Manager all those months ago you would have saved a few bob. Will give you something to remind you of the game through the summer.	11	38
14	Down	**Gauntlet** *US Gold* 2.99	The only reason for this falling in the charts is that everyone has got a copy. If you haven't, then your software library is incomplete. Go and buy Gauntlet.	9	35
15	Down	**Five Star Games** *Beau Jolly* 9.99	Another compilation which is doing an admirable job of hanging in the chart. Spindizzy makes this a classic compilation.	7	34
16	Down	**Konami's Coin Op Hits** *Imagine* 9.95	Take the best from the arcades into your home. Green Beret, Ping Pong, Hypersports, Mikie and the splendid Yie Ar Kung-Fu. Looking a shade dated now, but a good blast all the same.	12	33
17	Down	**180** *Mastertronic* 9.95	Digital darts. You can't use the excuse that you need to steady your hand when you practice this non-intoxicating bar-room skill.	13	32
18	Down	**Computer Hits 5** *Beau Jolly* 6.95	Yet another compilation. Old games never die, they just get recompiled. Good value as always.	16	30
19	Down	**Mini Office II** *Database* 14.95	Longstanding chart runner. A full suite of business programs for the price of a game. Ideal first look at sensible software with a wide range of powerful facilities.	14	29
20	New entry	**Jackie & Wilde** *Bulldog* 1.99	The last of the new entries in quite a quiet month, all the action being at the top of the chart. Budget and compilations tighten a stanglehold.	NE	28

Non-mover · Up · Down · New entry

Chart compiled by Gallup/MicroScope

Hi, I'm Lance Davis, your letters editor. If there is anything you think Amstrad computer users ought to know about then drop me a line. I can't deal with individual problems and this isn't really the place for programming tuition but it is the place for bouquets and brickbats, views and opinions. Write to me at the address in the front of the magazine or on Telecom Gold System 72:mag012. Remember that some writers will be sent free software, so let me know which computer you have.



Random reply

I AM writing to ascertain the algorithm behind the random number generator RND in the CPC 664. The generation of statistically sound series of random numbers is by no means as simple as it might appear, and any serious user is reluctant to trust a generator whose algorithm he doesn't know.

If you are unable to answer my query, perhaps you could ask the appropriate rom manufacturer. I am certain that I am not the first to seek detailed information on the Amstrad RND algorithm.

Even an indication of the type of generator would be helpful – is it a shift register generator, a linear congruential generator, an additive/subtractive generator, or what?

J.W.S. Allan,
Isle of Man

LD: *Thanks to Vik and Cliff for the answer to this one. The random number generator starts with the seed, adds 1, multiplies by 75 (this is a fiddle factor), divides by 65537 and then uses the remainder – 1.*

Finger fixes fault

I SEE some users were having problems loading their software. I did too, but found a way of overcoming those problems. If you press very hard on the lid of the cassette deck while loading there is a better chance of the program loading properly (at least on my micro). It may sound stupid, but it works.

I have a major problem of my own. After weeks of trying, I still haven't been able to obtain the great game Enduro Racer. None of the advertisers in your excellent magazine had it. Where can I get it (cheap)?

It is very hard owning a CPC 464 here in Norway. There are Commodore owners sneaking around everywhere, longing, to use their axe on my micro.

The guy down town at the local computer shop doesn't like the Amstrad so he doesn't care if his amount of software for this wonderful machine is less then the amount of braincells in his head – he isn't too bright.

Please help me (and the relatively few other Norwegians who have been bright enough to buy an Amstrad).

Lars Gundersen,
Drammen, Norway

LD: *It seems wrong to pick out one shop in favour of another, but my local dealer always seems to have a good stock of Amstrad titles and will happily do mail order to Norway. There may be a postage charge.*

You can call Adams World on 01-446 2241.

Family fortunes

WITH reference to letters from David Turner and Mr/Mrs Rowden I have found no suitable software that can handle the individual style of genealogists' files or lists.

Being the owner of the humble (but to my mind excellent) CPC 464 since Christmas this year, I have made my own program.

With the help of a few friends and a couple of calls to Amstrad I found this easily achievable.

Anyone wishing to see the programs should send two blank C15 cassettes to my address, and I will return the programs to them.

This leads me on to my problem, that the two programs if merged equal about 55k I would find the CPC 664 or 6128 a better machine to run.

Where can I find this machine without monitor and software at a more reasonable price than that advertised in mail order catalogues?

It could be suggested that I buy a disc drive for my Arnold, but I would prefer to remain with standard machines and stay compatible with other users of standard machines.

All in all, I still recommend the CPC 464 to all genealogists with some programming ability.

Bryan Hobson,
20 Heysham Park,
Heysham,
Morecambe,
Lancs LA3 2UD

LD: *What a wonderful offer. I suggest*

that anyone who takes Bryan up on this also encloses a stamped addressed envelope.

No fight flight

AS a new owner of an Amstrad 6128 I am looking forward to the day I can buy a good flight simulator.

I don't need the ability to zap the enemy or bomb churches as in Spitfire 40 and Deep Strike. I just want a cockpit simulation (visible ALL the time) and a cockpit view with a real feel of flying. The best I have used so far is the Acornsoft Aviator on a BBC Micro.

Surely someone can produce something similar or even better with the extra k available on the Amstrad.

I have ordered the Harrier which I believe will have some of the features I am looking for, but not the ability to find and line up with a runway.

The ability to print out details of the flight afterwards would also be useful.

If somebody is already attempting this can I persuade him to use all the available memory on realism and feel rather than gimmickry.

I know youngsters like to shoot down enemies and aliens, but there must be a few mature owners like myself who are past that sort of thing.

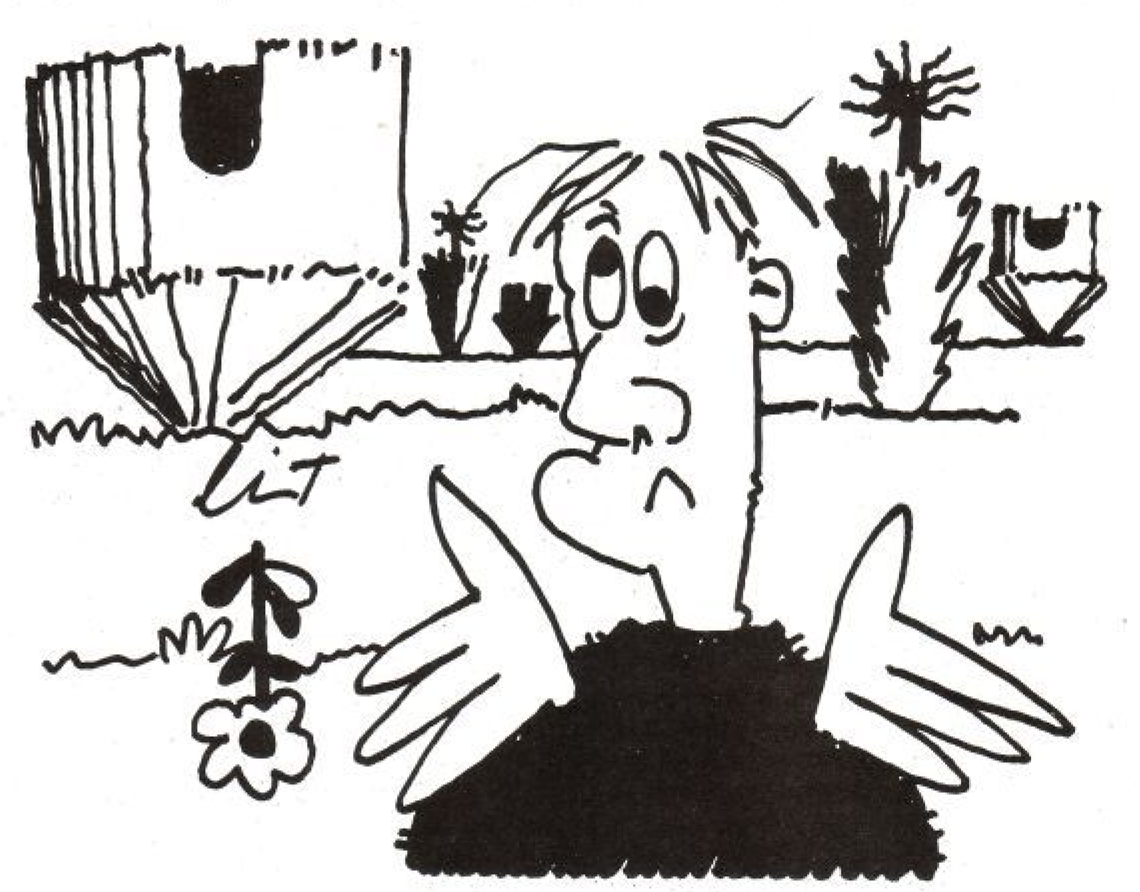
Incidentally, my children were absolutely hooked on Aviator once they got over the difficulty of keeping it airborne, and deserted their other arcade games for Aviator which gave them a sense of achievement.

A D Lynch,
Douglas, Isle of Man

LD: *This sounds like a problem of demand and supply. Many more people would rather zap greenies or chop off heads than go for a quiet session in a light aeroplane.*

Geoff Crammond, who wrote Aviator, couldn't be persuaded to convert his better known game Revs for the Amstrad although he did start. In fact, Sentinel is his only game to have made it our way.

Anyway, even Aviator has a shooting aliens scenario.



Tree mistakes

YOUR map of Feud has brought to light a serious bug. In my version the whole of the map is upside down. They've even tried to hide this by making the huts and trees the right way up.

Either that or the trees and huts on your map are the wrong way up. No – er – couldn't be, could it?

Adam Thirlwell,
Somerset

LD: *OK guilty, slap on the 'cuffs, condemn us to playing Amsoft games for a week. We got it upside down. I've sent you a copy of Leviathan to persuade you to keep quiet.*

Caught in a Vortex

HAVING owned a Vortex Ram Expansion since February 1986 I know that it is an excellent product with great potential. But there have been a number of problems when using the board with other hardware add-ons and with commercial software.

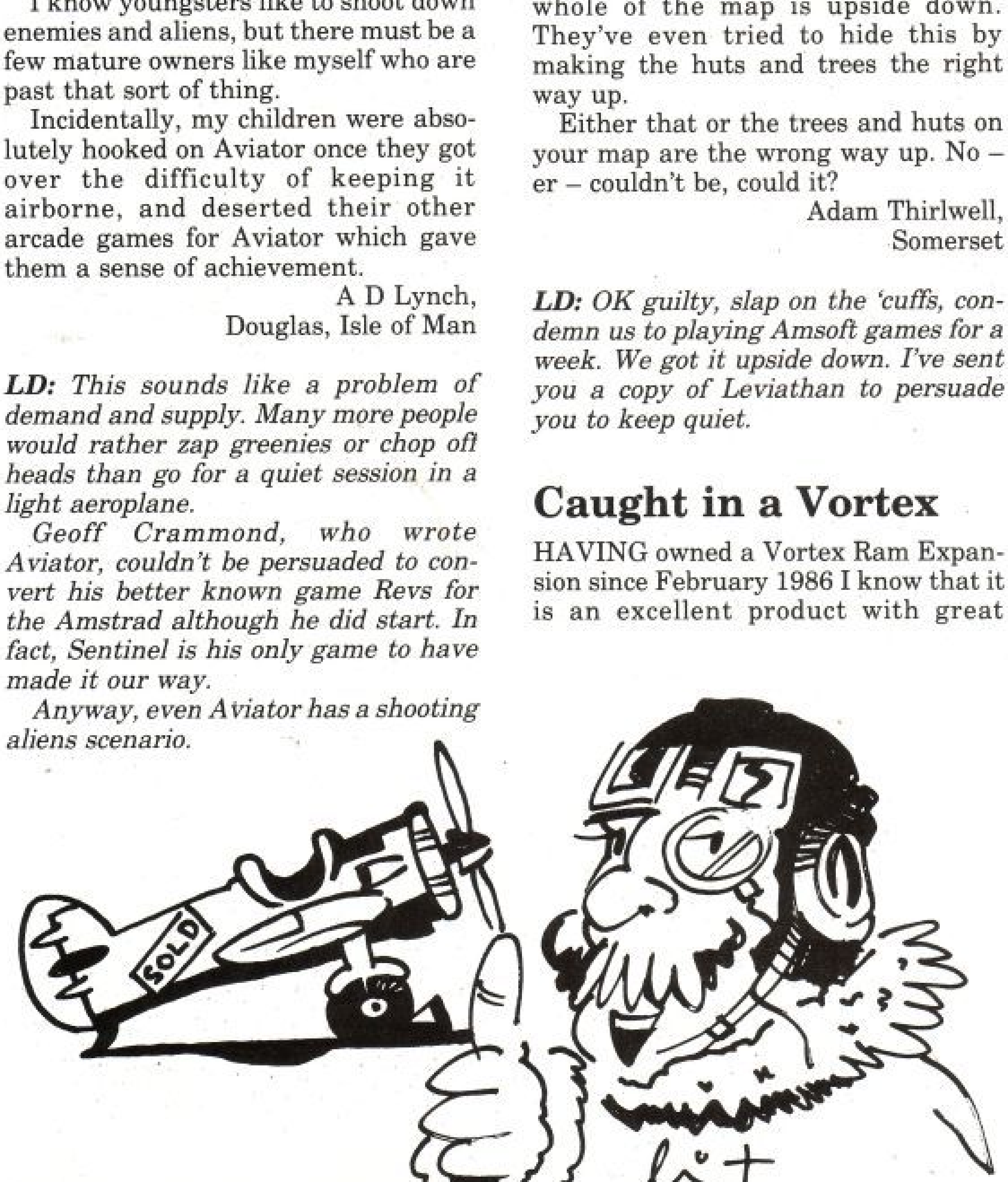
By far the biggest problem that I have found is understanding exactly how to make best use of the board's many features and commands.

If you too are a frustrated expansionist I suggest that we get in touch and form a self-help group. If you have modified commercial programs to run under BOS, experienced or preferably solved a hardware or software problem, or perhaps written a 200k program, please write.

In case you had not heard, Vortex has brought out BOS version 2.1, which apparently incorporates many improvements – mine is on order now.

Interested in the details? Write with your thoughts on a user group and please enclose a stamped addressed envelope! For 18p we can start to make use of all that extra memory.

Chris Peel,
30 Dale View Road,
Long Lee,
Keighley,
W. Yorks,
BD21 4YR



Junior programmer

I AM 12 years old and have been using the Amstrad CPC 464 ever since my Dad got one, way back in Christmas '84. I have mastered Basic and am well up in machine code.

In the July 1986 issue of your magazine you mentioned Logan and O'Hara's Complete Spectrum Rom Disassembly' (published by Melbourne House). I was wondering if there was a similar book for the Amstrad CPC 464?

In arcade-type games for the

Amstrad, when a sprite moves over background, it moves away again and the background remains unchanged.

I know you can achieve this using XOR, but if you use it, your sprite has a fit of technicolouritis, so how do you do it without using XOR?

Jeremy Longley,
Tonbridge, Kent

LD: I'd recommend two books . The first is The Complete Firmware Specification SOFT 968 from Amsoft (contact them on 091-567 3395), and the other is an Amstrad Entry Point Guide from Melbourne House. (They are on 01-377 6880).

There are two ways round the XOR problem. The professional way to put a sprite on the screen is to store what was there before, plonk the new sprite on top. and then replace the missing bits from your store. This is known as creating a mask.

You have to time things with the VSYNC, or else the result flickers.

The sneaky way around the problem is to set the colours up in the palette so that the colours which show through as a result of the XOR are the same as those in the sprite.

This drastically cuts down the colours you can use, and is only useful in Mode 0, but it is jolly quick.

I have sent you a copy of BMX Simulator so you can see how the professionals produce convincing sprites.

The price is right

I AM always on the lookout for good games, but like many more Amstrad users I can't understand why a big chain like W.H.Smith sells games for a higher price than smaller independent shops.

Surely people are going to catch on, and then Smiths will be out of business.

Grant Pierce,
Cranleigh, Surrey

LD: Most people buy games in the big chain stores. So when you pop into Smiths for your copy of ACU, you might also buy a copy of Pig Breeders Gazette, a pack of 65 felt tips which dry up if you leave the top off for 20 minutes, Sheena Easton Sings, the Beatles on CD, a bar of Yorkie or the latest Imagine game converted from the Taito original by Probe and sold through Ocean.

To compete, the independent shops need to offer a better deal. After all who could resist Sheena Easton?

This may take the form of lower prices or a wider selection. In a free market economy we have a choice and the shops can charge what they like. WHS must know what it is doing or it wouldn't be so big.



Dan nah, nan nah, nan nah, VATMAN

I ALWAYS wonder why the many pocket size calculators will give an instant answer on that dreaded word VAT.

Why is it that the Amstrad computer does most things but when it comes to, dare I say it again, VAT the keyboard has no key for percentages.

Can you please give me the reason, and is there an easy way to program percentages in Basic into a program, total + VAT, without breaking any copyright, and why it is not mentioned in the mags and manuals?

This VAT thing looks as if it is going to be in much demand and I need this to update a program which deals with certain utilities which does not include VAT.

I'm a nice person so I would not downgrade the Amstrad, it's real value for money, schools could have twice as many computers if they used those much dearer computers to work it out, wouldn't you agree?

Roy Evans,
South Glamorgan

LD: Adding VAT is a simple matter of working out a percentage. So to add 15 per cent to a price just multiply by 1.15. This proglet should do it:

```
10 INPUT "Sum without VAT";price
20 PRINT "Price with VAT at 15%=-
";price*1.15
```

Simple really.

No bug in Protext

I NOTE Dr Stadler's letter in the July *ACU:* I use Protext v.1.22 in rom on my 6128, and there is nothing wrong with the >OC command.

The only bug I have found is in the background printing routine, using single sheets (this uses Promerge rom).

When a page is complete it sends a message to the screen and stops operations, so you can feed the printer and then continue with a keystroke.

It is not a safe procedure, and frequently corrupts the keyboard input buffer (they tell me) making control of the program impossible (strange effects, none of them useful).

Arnor has been, as usual, terrific; providing a short program to reset the buffer and continue.

But there doesn't seem to be any way round the bug itself. Using continuous paper, there are no problems.

Arnor's support is superb, but the company is bad at answering letters. Clearly it operates a telephone culture.

Once, when I had trouble corunning another program (the set-up for the KDS 8 bit printer interface which uses the same area of memory as Promerge) it diagnosed the problem over the phone, and within a few hours called me back and dictated a new set-up program, which worked first pop.

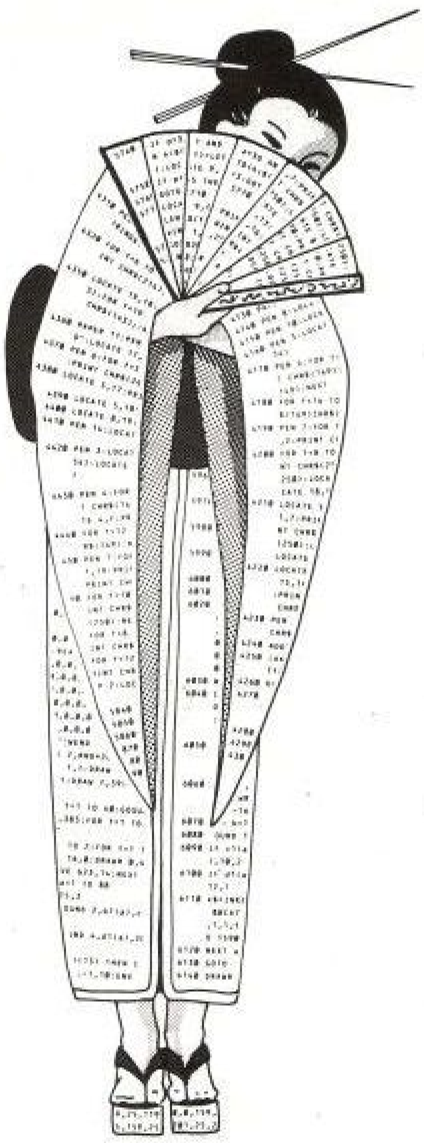
Finally, I have tried Protext CP/M on the CPC with two disc drives, and it's not worth it. Without the M: drive of the PCW, it is grindingly slow.

The only reason for using it would be to handle files larger than 85k (the practical limit with Protext/Promerge rom). Even then, it would need a silicon disc, or a hard disc, to work.

Peter Ceresole,
London

LD: We expect to have some more details on using the OC command next month and, it is good to see that plenty of people still take CPCs seriously. If you have any problems with a software application please write in.

LIZ TING



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Imagine a program listing. A listing for an amazing action game, about 3k or 4k long. Mostly it is written in Basic but it might have a few machine code routines to do some of the things that need speed. It works on the 464 (with or without disc drive), 664 and 6128. It might run (using Mallard Basic) on the PCW8256. Did I hear you say you have one right here in your pocket? I did? Hand it over. We want to print it!

Yes, that's right, we want lots of shortish programs for our readers to type in. They don't have to be games – we just have a preference for them. They can be anything that we find interesting. The things we don't find interesting are biorythm programs, pools predictors, simple databases, or anything to do with quadratic equations – unless they are written in one line, cello-taped to half a million quid or draw a pretty picture on the screen.

There are a few golden rules for submitting programs. Remember that you are writing a program for publication. Make your program easy to debug. Don't include unlistable characters in the program. Document start addresses and length of code when using machine code. Send the program on tape or cassette and include a SAE if you want it back. If you think the program does something particularly clever, write an explanation of the routine that does it. Don't include commands that work only on one particular machine.

Now you know what to do, get cracking! Send off your program today to:

Liz Ting
Amstrad Computer User
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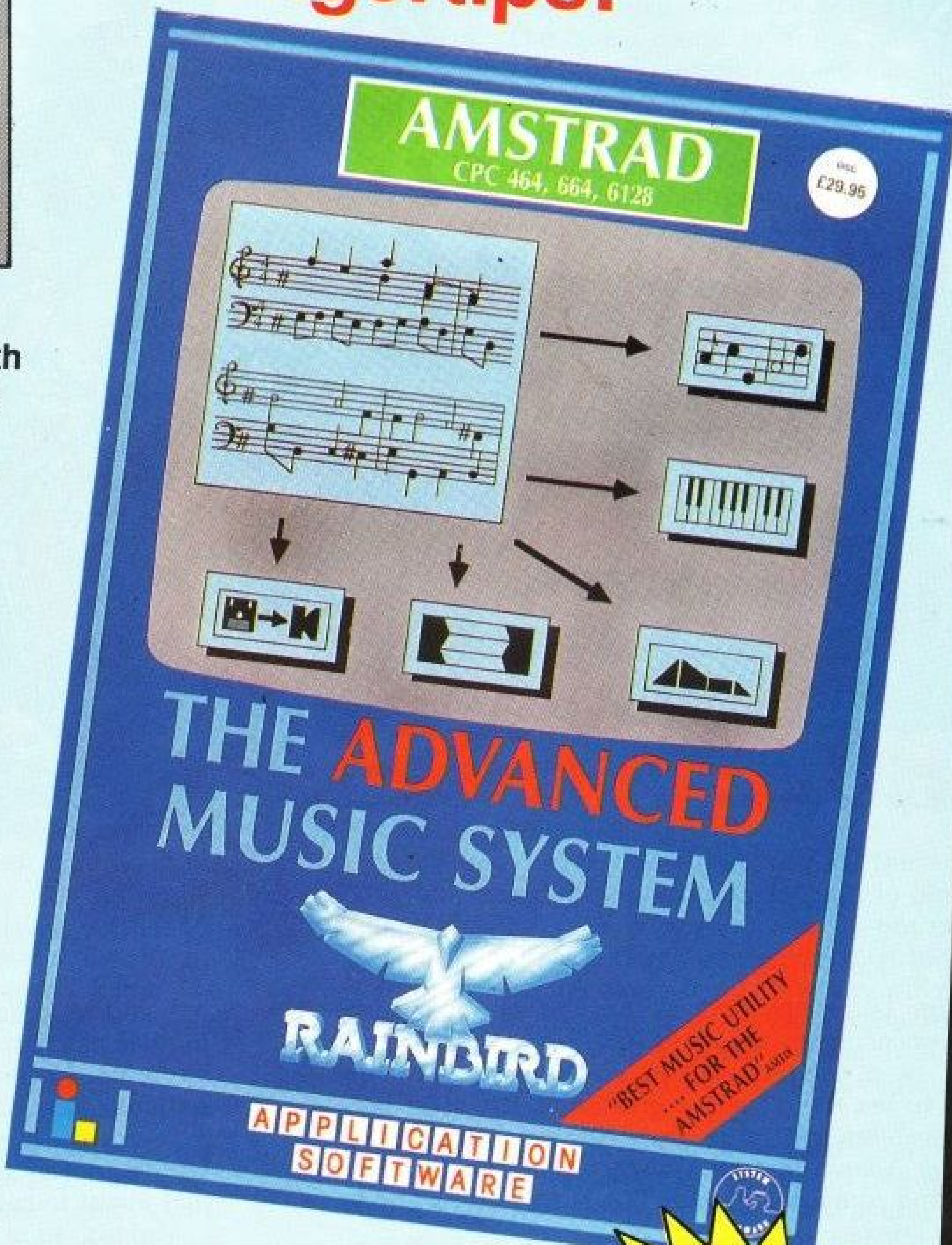
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Seek and ye shall find..



Infocom is recognised as one of the premier producers of adventures and deserves high praise for giving us a regular diet of new and frustrating games to tax the cleverest grey cells. Its latest baffling problem setter is Bureaucracy, written by Douglas Adams, better known for his best selling book (and computer game); The Hitchhiker's Guide to the Galaxy.

Most of Infocom's games are far from easy and this, together with excellent textual descriptions, adds to their attraction. Many have you banging your head against the wall, desperately trying to think of another way to tackle its zany puzzles. Of all the games I have played, Bureaucracy is the most painful.

The underlying principle of the game is based on the understanding that: "what can go wrong, will go wrong". The particular emphasis in this case is society's growing dependence on computers and the ever present paperwork that feeds them. Forms for this and that, forms that contradict themselves and penalise logical thought. Forms that create red tape that is beginning to choke the system that is the heart of modern bureaucracy.

You play an upwardly mobile young whizz who has just changed jobs. Your previous employment in software development was with the Deep Thought Corporation of America, now you are just about to start with the Happitec Corporation. The company has on the surface what appears to be an excellent method of ensuring a good start for new employees – a combined training seminar and holiday at its international headquarters in Paris. You would think everything in your world was smelling of roses. Unfortunately fate, and the bureaucratic process, is just about to catch up.

Moving to a new house, you have of course, informed all those who need to know your change of address. For starters, the bank's computer did not approve of the form you used and was unable to make the necessary changes. Realising that something has gone wrong the bank has sent a replacement form, together with a new cheque book and credit card. But where have they sent this vital package, you've guessed it – to your old address.

This is the first of many catastrophes that are about to arrive almost literally on your doorstep. The computer used by the removal firm has also had a minor seizure, so you have no furniture. This will be put right in two weeks and you are not really worried, as you will be away in Paris while it is sorted out.

Part of Happitec's welcome package is a cheque for $75, so when this arrives, solving the bank problem is not vital. On the other hand, today you travel to Paris, and the cheque has not yet arrived...

There are several options. You could try to go back to your old address to collect the missing mail. There

are also plenty of hints that mail deliveries are not arriving at their correct destinations. Perhaps you should ask around the neighbourhood. Then again you could try to make a few quick bucks some other way.

The neighbours are a strange lot. They include a paranoid gun-toter who lives in a camouflaged and fortified house just down the road, an elderly matron with a schizoid parrot and a loaded elephant gun, and a llama farm complete with one potentially hostile llama.

The rest of the street is almost normal with a mad stamp collector, the local branch of your bank, a travel agency, a bookstore and a small but very annoying cafe.

Somehow you have got to find some readies, collect your ticket from the agency and get a cab to the airport before your plane leaves. Scoring is judged on your blood pressure, each setback pumping it up a few more points – too high and something bursts. There are several other ways to come to a sticky end, so do not expect a quiet, peaceful weekend when you start playing Bureaucracy!

I am in two minds about this game. It certainly comes up to Infocom's normal high standards of presentation and programming. The text is good and the puzzles are devious. But, at the end of the day I like to be frustrated by my inability to solve the problems and not by programmed-in frustration.

Two early examples of this are when you visit the bank and the local cafe. At the bank there are a number of tellers. Needless to say you get no joy out of them as they insist on playing dumb as far as your problem is concerned. Personally I would just demand to see the manager but this is not permitted. In the cafe, after refusing to order a drink the waitress insists on you telling her what drink you wouldn't order. Ordering a simple meal becomes long winded and an absolute chore.

Worse still the order is lost and you have to go through the whole performance again. This sort of situation is aggravated by Infocom's superb parser requiring nearly all words to be typed in full.

I have said before, I am lazy, a slow typist, and I feel too much importance on long-winded entries destroys the pace and atmosphere of an adventure. Bureaucracy is a brilliant take off of what is happening all around us – but be prepared to be highly frustrated. In common with all other Infocom games, Bureaucracy is available in CP/M format for Amstrad 3in disc drives and on a 5¼in disc for the PC1512.

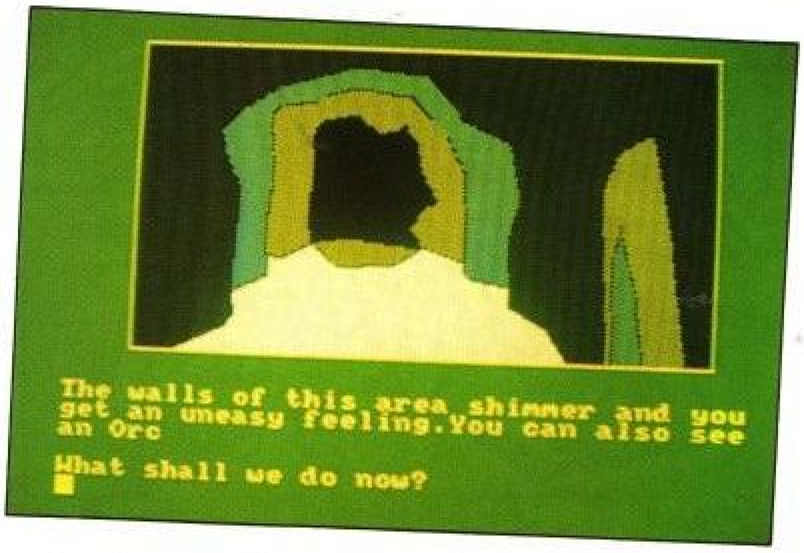
Golden oldie

Years ago Incentive Software produced a trilogy of text only adventures for the Spectrum that received good reviews and were full of classic puzzles. Conversion to the Commodore 64 followed but we have had to wait a long time for an Amstrad version. Mountains of Ket is the first of the three and now comes complete with graphics (thanks to GAC). To make the deal even better it comes together with a brand new adventure, Top Secret, under Incentive's Double Gold label. Cassette versions only, for the Amstrad CPCs.

You are a condemned murderer (you were framed), taking the option of saving your life by accepting a quest to destroy the leaders of the evil forces invading your country.

The elders have decreed that to ensure your loyalty you will have a magic assassin bug attached to your neck. The bug's name is Edgar and he will ensure your continued pursuit of the quest and also give all help he can.

In this first part, your task is to get to the other side of the Mountains of Ket. The destruction of Delphia and Vran Verusbel the evil leaders comes in the next two parts. You start on the outskirts of a



village to the west of the mountains and must use your wits to find the necessary items to find the hidden cave entrance.

Once you enter the cave system, there is no turning back and you will learn there is plenty to find. Treasure is there for the picking – but remember that this is *not* your main purpose. It increases your score but there are other things you will need to reach your final destination. Several items could be worn but although they do not appear to fit – fear not, their benefit is still there if you have them with you.

One possible criticism is the combat system. You will need to fight various creatures. Trading blows with them could sap your energy and even kill you. It is wise to save your game position fairly regularly to resurrect yourself if the need arises. There is one time when you have to take part in a little gambling – the outcome *is* random, but is determined by the number of moves you have made. If at first you fail, go away and come back later.

The puzzles are fairly logical and the game is quite addictive, it should be a good starter for newcomers and old hands will welcome its revival in a new guise. The other two parts will be produced if this version goes down well with you the adventurer. Each is complete in itself but it would be nice to have the full set for the Amstrad.

Topical twists

We have had a lot of fuss recently over what should or should not be kept secret from the public. Playing Incentive's Top Secret may give you an insight into what some investigative journalists get up to.

Written using their own Graphic Adventure Creator, Top Secret puts you in the role of a newspaper



reporter who given an inside tip on a Government leak, is determined to scoop the world.

There is talk of a new type of missile which is hotly denied by official circles. Peter Jones of The Daily Mercury (you), gets a call from the 'mole' that started all the rumours; together with the location of the secret complex and some hints on how to get inside – the rest is up to you.

As the establishment is highly undercover, there are no obvious outward signs of security other than the obligatory fences. You will soon find an entrance to an old sewer system that puts you within spitting distance of your first objective. Of course you will have to find some way of distracting the dogs and a safe way to scale the barbed wire, but for a resourceful man that should prove no problem.

Once inside the last fence, there is a more obvious military presence. Avoid them, bottomless bogs and rabbit holes and you may well think you are on the right track. But do not get too overconfident, there is plenty to occupy you. The puzzles are logical, even obvious, but the game will keep you on your toes to the end. The general atmosphere is good even if guards never seem to see you unless you blunder into them. Perhaps you were a dandy Boy Scout.

The parser is the standard GAC system that we have come to expect, fairly basic, which occasionally calls for a more complex input. Many objects that you can use are there for the taking, but there are also a sprinkling that will only appear when you examine things more closely. This program also has an annoying tendency to inform you that "you see something", that you then have to LOOK to see what it is that has been found. A minor point but one that always strikes me as illogical not to mention time wasting.

Incentive's Double Gold labels look as though they may be well worth looking out for in the future. Mountains of Ket and Top Secret offer good value – give them a try. There is already a second Double Gold offering: Black Fountain and Sharpe's Deeds but more about them next month.

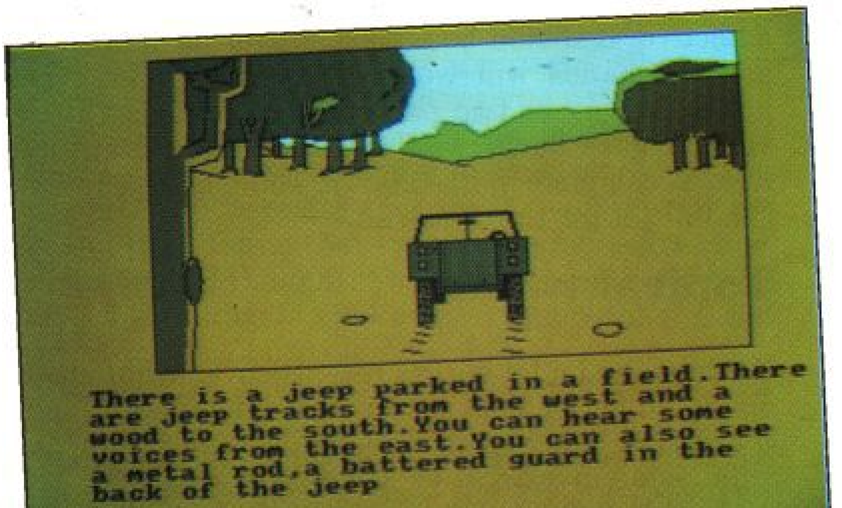
Down in the jungle

Something stirred. You have been a prisoner of war for 14 months now and a slight fever has laid you low for a few days. The camp is almost deserted, the other POWs are out on work details and the remaining guards are very easygoing. They believe that with the jungle the camp is escape proof. Now is your chance, a quick shufty around to find anything that may be useful and you're off.

Escape from Khoshima by Atlantis Software gives you the chance to put yourself in the shoes of this lone British escapee. At only £1.99, you can sweat it out in the Burmese jungle and see if you can pull off the impossible. Like so many of today's cheaper adventure games it utilises GAC and will provide quite a few hours of search and trauma to while away those wet summer evenings.

The plot is straightforward with no real surprises and the puzzles are on the whole unremarkable. Like any adventure game, it is unlikely that you will solve everything at one sitting, so it *has* to be reasonable value for money.

What is more, for those that are not all that used to solving mazes – it will provide plenty of practice. Once outside the prison compound you enter a selection of interlinked mazes. With some 25 identical







locations, you will have to use care to map them thoroughly.

Fortunately even highly edible items do not get eaten up by the local fauna (although you may), so the old dodge of dropping various objects to help you map mazes works up to a point. Patience, a sharp pencil and mind should see you through – just watch out for those Japanese dogs, their bite is fatal.

Return to Kerovnia

To follow The Pawn, Magnetic Scrolls will have to pull out all the stops. The follow up is now available for inspection: The Guild of Thieves. Available for the PCW already, CPC and PC1512 owners will have to wait for their version a little longer. As with all the high quality adventures that Rainbird distributes, none of these are going to be cheap. Packaging is as always excellent and instead of the novella found with The Pawn, this time you get a copy of What Burglar magazine. This includes general playing hints together with encoded clues to help the lost and despondent.

The action again takes place in Kerovnia, but this time you play the part of an up and coming thief. To show your worth and rise within the Guild, you will have to pull off some pretty amazing stunts. May the long arm of the law never reach out for you. Just watch out you do not become too addicted – to the game that is...

RATINGS

	Mountains of Ket	Top Secret	Escape from Khoshima	Bureaucracy
Plot	63	63	57	70
Atmosphere	65	65	55	75
Addiction	73	69	65	75
Difficulty	60	60	56	80
Overall	67	66	59	73

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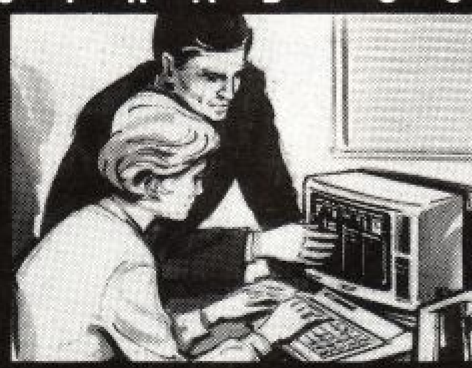
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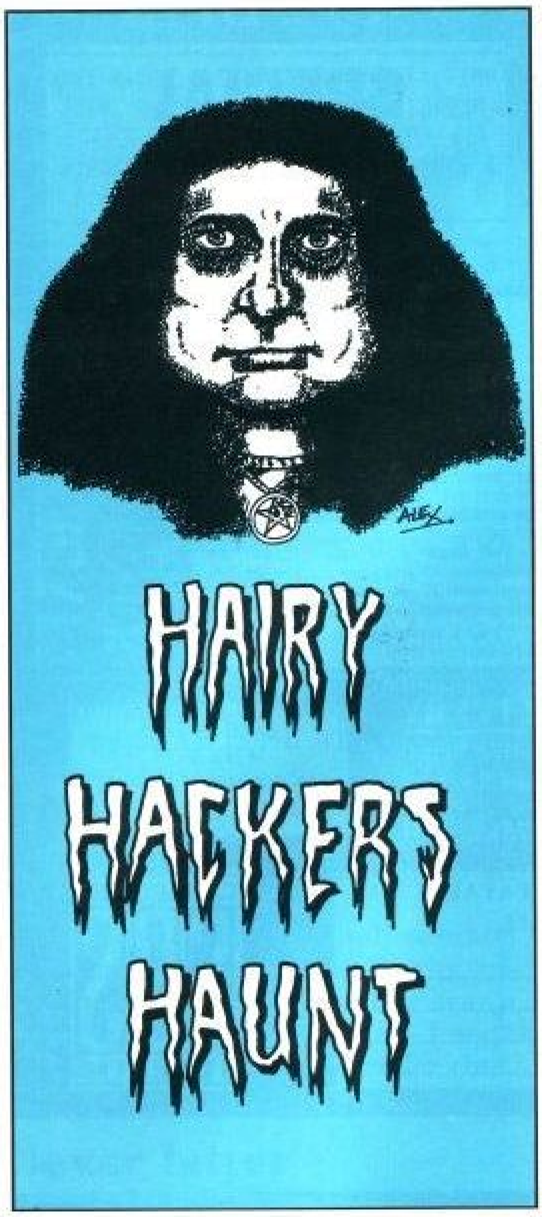
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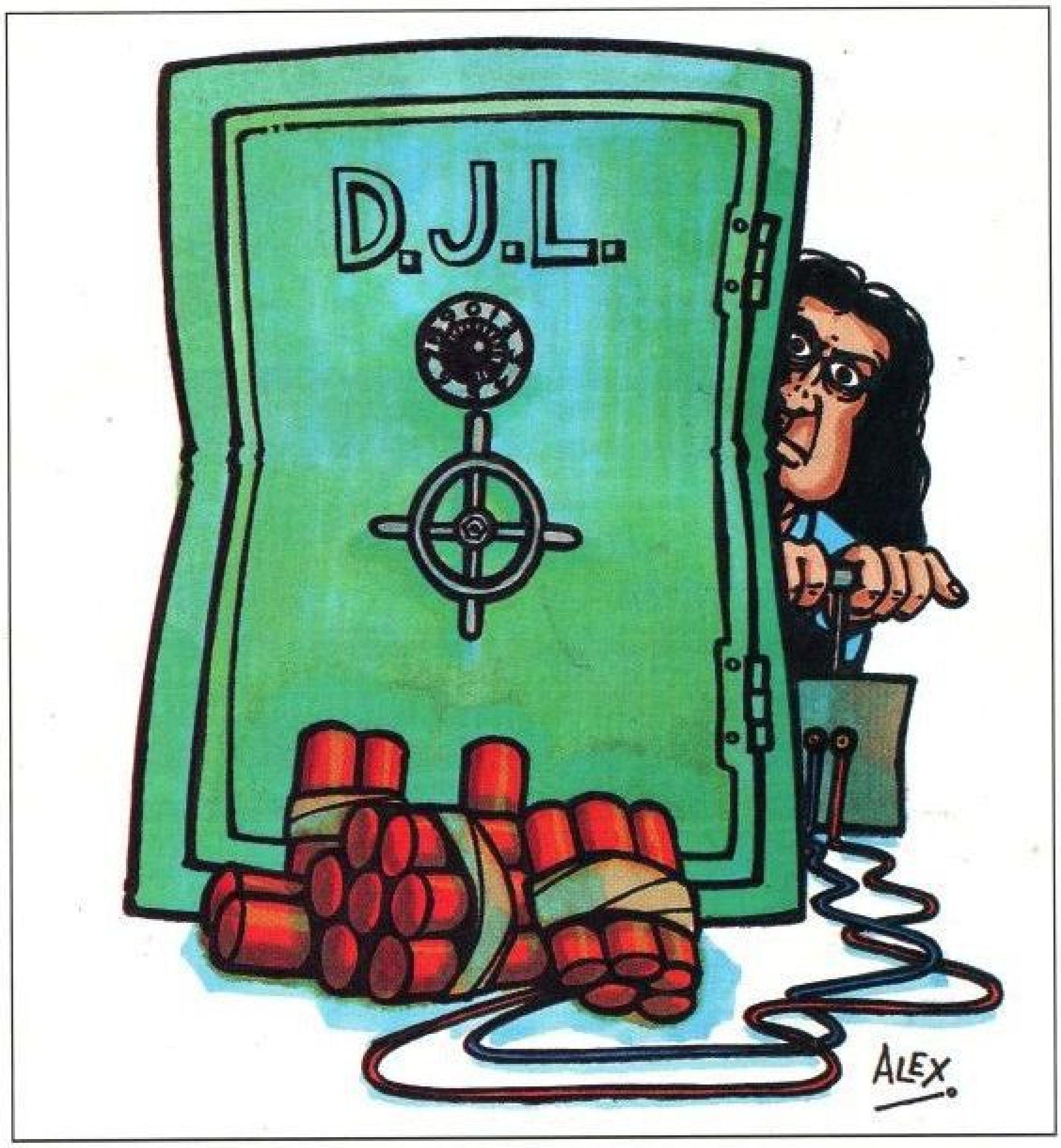
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Monkey business

Is the world safe as Vax and Justin have another crack ?

DID you know that if 10 monkeys sat down at keyboards and typed out Hairy Hacker's articles at 30 words a minute , I'd be out of a job ?

Didn't think so. Still, here's where we start off this week's monkey business, with letters. This is where you (the confused) ask the likes of me (knowledgeable, but still confused) what's up.

Mr P. Marshal from Armagh wants to know several things, to which the answer is very nearly 42, but I'll try to answer a few. The difference between a DMP 3000 and a 2000 is 1000. Also, the 3000 is IBM and Epson compatible. Currently, it is difficult to get hold of DMP3000s, the 3160 being a sort of replacement.

There is also a difference of 20 quid, and the 2000 has a lead for a CPC while a 3000 has a lead for the PC. No, I don't think there will be a 2160.

Chuckie Egg was covered a while back by Stewart Russell, and the SYMBOL command really is in the manual.

To fill a big area on a 464, define a graphics window and clear it to the required colour. It beats drawing lots of lines, and you can always trim the edges later.

Nearly finished. Yes, a DDI1 comes with CP/M, you can plug a 464 into a CTM644 and no, there is no such thing as a decent database; they are all horrendous beasts to use. I use Micropen on a 464. It is very limited, dated, but so simple that I can use it.

Too much rom to swing a cat

I could do with a beer after that little letter. Aaahh! Now I feel up to dealing with Steve Switzen of Reading – he with the unreadable fancy-font output device.

As near as I can tell Steve, you've got too many roms in there, which is why the Elite hack comes up with "Out of memory" complaints.

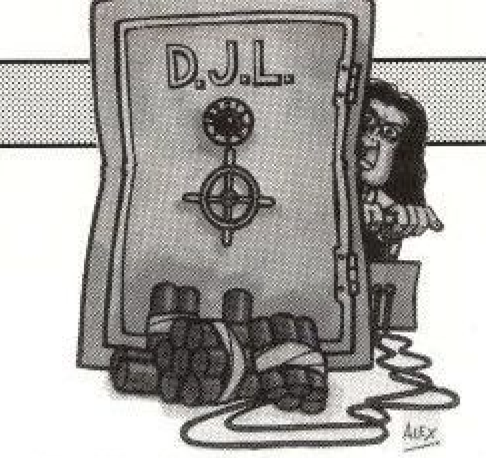
Remove any Silli- disc and speech roms. Although they are all in rom, they also borrow a bit of ram for scribbling in. All clear now ? Good, I'll finish the beer while you unplug the roms.

Now a wee pokette or two from Mr. M. J. Lyons (B.A. E.T.C.) of Manchester. He and his small furry creature from slightly left of Betelgeuse have come up with two proggykins, one for Karl's Treasure, and one for Binky. I ain't got these, so I haven't been able to test 'em. Anyway, the Karl poke gives you up to 75 lives, and looks much like this:

```
10 OPENOUT "D"
20 MEMORY &AFF
30 LOAD "KARL",&1000
40 POKE &64E4,XX:'This is where the live
   s go.
50 CALL &1000
```

The binky poke goes on the blink when you reach level two and 99999 points. Mere mortals are evidently not supposed to do that sort of thing, and the score goes kind of strange looking

How to join: See Page 13



in protest. That aside, try it if you will:

```
1 MEMORY &A000:OPENOUT"A":MEMORY &1FF:MO
  DE 2:INK 0,0:INK 1,0:BORDER 0:LOAD"BIN
  KY":LOAD"BINKY1":POKE &E60D,9:POKE &E4
  8A,0:POKE &E48B,0:POKE &E48C,0:POKE &E
  48D,0:CALL &FC00
```

That little lot should all be written on one line, as there ain't much room for loading Binky.

Poke problems

Now then, Richard of Walsall, who typed in 12 pokes with a 10 per cent success rate, some advice:

- Saying "It don't work" isn't very specific.
- Sometimes people ship five different versions of the same game. It might not work 'cos you have a different version.
- A brief glance at your spelling shows that it might be worth while checking what you typed in.
- Make sure you aren't using the disc version for tape or vice versa. Silly, I know, but some people haven't been told.

We 'ave yur a letter from Desperate, of Eccleshall (Ron Maxwell, any relation?). He is getting scores of over a million on his copy of Gauntlet. I don't have the skill or the patience for that. Anybody else got that happening ?

Clever letter stretching

Now an offering to the Great God Glitch from Tim Ruffle of Spennymoor, Co. Durham. It is a double height routine with five redeeming features (numbered a to e (?)). It doesn't:

a) Reset HIMEM.
b) Redefine any characters.
c) Use machine code.
d) Take all week.
e) Look less comprehensible than a C program.

The routine handles like TAG printing, and does reset your graphics windows. Still, try this and see what you think:

```
10 display$="Double Height !":textx=70:t
   exty=215:promptx=3
20 FOR i=0 TO 2
30  MODE i:GOSUB 100
40  display$=display$+"  "+display$:prom
   ptx=promptx+(i*10)
50  LOCATE promptx,20:PRINT "Press any k
   ey..."
60  WHILE INKEY$="":WEND
70 NEXT i
80 END
99 ' This is the useful bit
100 text=0:TAG
110 FOR textl=texty-1 TO texty-33 STEP -
    4
120   ORIGIN textx,textl,textx,639,textl
    ,textl+2
130   MOVE 0,text:PRINT display$;:text=t
    ext+2
140   NEXT textl
150 TAGOFF
160 RETURN
```

For his devotion to an ultimately impressive but "limited use" goal, I shall award this kind soul: Hack of the Month. Many congrats., and give us a list of games you want, and specify tape or disc. We'll try to get one of 'em for you.

As Count Dracula says, on a similar vein, the Ed asked me for a routine that rotated colours up a character. This bit by Tim, I thought, seemed particularly suited to a wee hack. Try this one, and see if you can make use of it:

```
5 MODE 0
10 display$="The Hairy Hacker":textx=30:
   texty=380:GOSUB 100
20 display$="Hacks it again !":textx=30:
   texty=300:GOSUB 100
25 display$="Thanks Tim !":textx=100:tex
   ty=200:GOSUB 100
30 j=1
40 FOR i=1 TO 9
50 INK i,(i+j) MOD 27
60 NEXT i
70 j=(j+1) MOD 27:IF INKEY$="" THEN 40
80 CALL &BBFF:'Make screen legible again
   .
90 MODE 1:END
99 ' This is the useful bit
100 text=0:textc=1:TAG
110 FOR textl=texty-1 TO texty-33 STEP -
    4
120  ORIGIN textx,textl,textx,639,textl,
    textl+2
125  PLOT -1000,-1000,textc:textc=textc+
    1
130  MOVE 0,text:PRINT display$;:text=te
    xt+2
140  NEXT textl
150 TAGOFF
160 RETURN
```

With a little modification (left as an exercise to the rookie hackers out there) these routines can be modified to print in any height you like.

They work by defining a window one line high, and printing a string in the window. The window is then moved down, and printed again. If you do this eight times, you end up with an awfully stretched character.

My addition simply changes the colour (the PLOT -1000,-1000,i) by plotting a point of the visible screen in the required colour. 6128 owners have a special command for that, but then I haven't got a 6128 at the moment.

Justin Jamboree

Well, for the Justin section this month, here's the first of a flight of three conventional pokes before we hit you with all the heavy stuff (which you will like). Until you read that console yourselves with truly infinite lives for Mastertronic's Galletron, PASTE[R] :

```
10 MODE 1:MEMORY 12345
20 tot=0
30 FOR n=&1228 TO &123C
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:tot=tot+a
60 NEXT n
70 IF tot<>2182 THEN PRINT"Oh Dere there
   s an error in the data.":END
80 LOAD ""
90 CALL &1228
100 DATA 3e,12,32,6f,9a,c3,00,9a
110 DATA af,6f,67,22,b3,60,32,b5
120 DATA 60,c3,30,60,4a
```

Ah I see. Fun factor overload was aborted due to lack of Galletron tape. Oh well, see if you have a little more luck with infinite lives and shields for BUDGIE'S (sik) Zarkon. This is either a PASTE[R] job, or fast forward past the first file and run the routine. Before you get in though, a note from the author of the pokette, the one and only Justin.

"This poke was nearly never written due to the fact that I actually felt guilty about poking this game because it plays incredibly well, but that's only my opinion. As you can see though my morals are pretty low so here's the routine:"

```
10 MODE 0:OPENOUT "d":MEMORY &3FF
20 BORDER 0:FOR i=0 TO 15:READ a:INK i,a
   :NEXT i
30 tot=0
40 FOR n=&100 TO &118
50 READ a$:a=VAL("&"+a$)
60 POKE n,a:tot=tot+a
70 NEXT n
80 IF tot<>2388 THEN PRINT"5#1T! theres
   an error in the data.":END
90 LOAD "!code1.bin",10000
100 LOAD "!",11000
110 CALL 10000
120 LOAD "!",&400
130 CALL &100
140 DATA 00,13,26,12,24,09,18,15
150 DATA 20,01,02,11,04,08,26,06
160 DATA f3,21,00,04,11,00,02,01
170 DATA 00,9e,ed,b0,3e,18,32,69
180 DATA 8b,af,32,9d,8f,c3,c3,94
190 DATA 4a
```

Things are moving now, so let's move it with an infinite lives and oil for the disc version of Gremlin's Thing Bounces Back.

To use just follow on screen instructions:

```
10 MODE 1
20 tot=0
30 FOR n=&80 TO &B2
40 READ a$:a=VAL("&"+a$)
50 POKE n,a:tot=tot+a
60 NEXT n
70 IF tot<>4010 THEN PRINT"Oh no the dat
   a in lines 100-160 if wrong":END
80 INPUT "Enter disc and press enter ",a
   $
90 CALL &80
100 DATA 21,B2,00,CD,D4,BC,79,22
110 DATA 64,00,32,66,00,21,00,01
120 DATA 5D,55,0E,41,DF,64,00,24
130 DATA 24,0C,DF,64,00,21,A6,00
140 DATA 22,05,01,C3,00,01,AF,32
150 DATA 19,92,C6,18,32,35,93,C3
160 DATA 00,88,84,4a
```

Speedlock key

I bring you bad tidings, fellow hackers. There is a new form of Speedlock that defeats all previous simple loaders.

I bring you good tidings, fellow hackers. There is a new form of Speedlock blaster that supersedes the previous simple blasters.

Seriously, the routine below is Justin's speedlock picker V1.1 . Don't ask what happened to V1.0, OK ? It is a pretty sizeable routine, and we're gonna be using it a lot from now on (until they change the speedloader again ...).

So, save this one off to disc/tape/ 400Mbyte bubble memory or whatever, and tack the code we supply for individual games on the end of the Speed Lock Infiltrator Poke (SLIP for short). Rewind the victim tape, run the customised SLIP at it, and Robert's yer father's brother.

Here it is. We'll publish it again in a month or three, but don't lose it in the meanwhiles:

```
10 ' Lock Picker Ver. 1.1 (by Justin, Co
   pyright ACU)
20 MODE 1:MEMORY 12345
30 tot=0:ad=&7FF0
40 READ a$:IF a$="end" THEN GOTO 80
50 a=VAL("&"+a$)
60 POKE ad,a:tot=tot+a
70 ad=ad+1:GOTO 40
80 READ sum
90 IF tot<>sum THEN PRINT"ZUT! You'd bet
   ter check all the data.":END
100 LOAD "!"
110 CALL &7FF0
120 DATA f3,21,00,80,11,00,be,01
130 DATA ff,00,ed,b0,c3,35,be,4a
140 DATA 21,0b,b9,36,b9,23,23,23
150 DATA 36,2e,ed,4b,02,bc,06,8a
160 DATA 11,00,b9,c5,1a,d5,11,79
170 DATA 03,91,21,8a,b9,ae,77,23
180 DATA 1d,20,fa,15,20,f7,d1,13
190 DATA c1,4f,05,20,e6,3e,c9,32
200 DATA 82,b9,c3,56,be,21,49,be
210 DATA 3e,c3,32,f4,37,22,f5,37
220 DATA 21,ff,ab,11,40,00,c3,c1
230 DATA 37,21,4b,00,36,45,23,23
240 DATA 23,36,99,f3,f1,c9,dd,21
250 DATA d9,bb,ed,5b,74,be,cd,67
260 DATA bb,dd,21,76,be,dd,6e,00
270 DATA dd,66,01,11,78,be,73,23
280 DATA 72,c3,03,bc
290 '
```

You'll like this, not a lot, but very much. The first SLIP poke ever is infinito lives for Ocean's Mario Brothers. That's a tape, as are all SLIP proggies until further notice. You can remember what to do, so get on with it:

```
300 DATA 83,00,5a,bc,af,32,c0,5b
310 DATA 32,31,6b,c3,80,a2,4a
320 DATA "end",16306
```

I forgot to mention that once you've got the SLIP proggy typed in, the rest is fairly short. So short in fact, that we've got room for a couple more of Justin's favourites, infinite lives for the tape version of Martech's Pulsator. Pick up your 'stick and, like, pulsate man:

```
300 DATA 93,00,5a,bc,21,00,00,22
310 DATA 95,53,22,97,53,c3,49,4a
320 DATA "end",15958
```

Last SLIP pokeykins here, is for Imagine's Mag Max. Not quite an infinite lifer, but it takes out collision detection quite nicely thank you. Couldn't run off a version of this for my next driving test could you Justin ?

```
300 DATA 83,00,5a,bc,3e,c9,32,d5
310 DATA 1a,c3,00,02
320 DATA "end",15782
```

So then, that's it for another month. I shall leave you to ponder over my list of good reasons to use logo:

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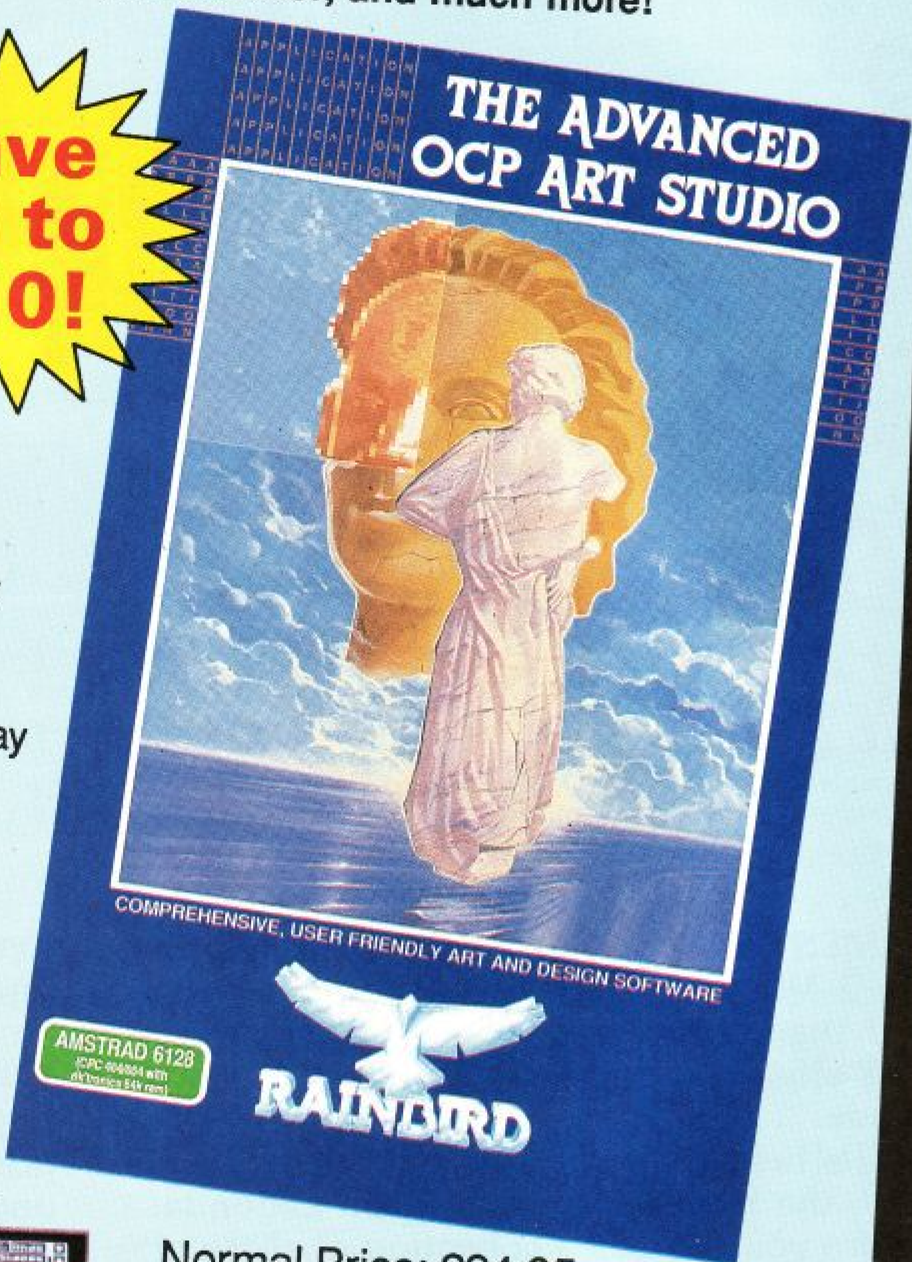
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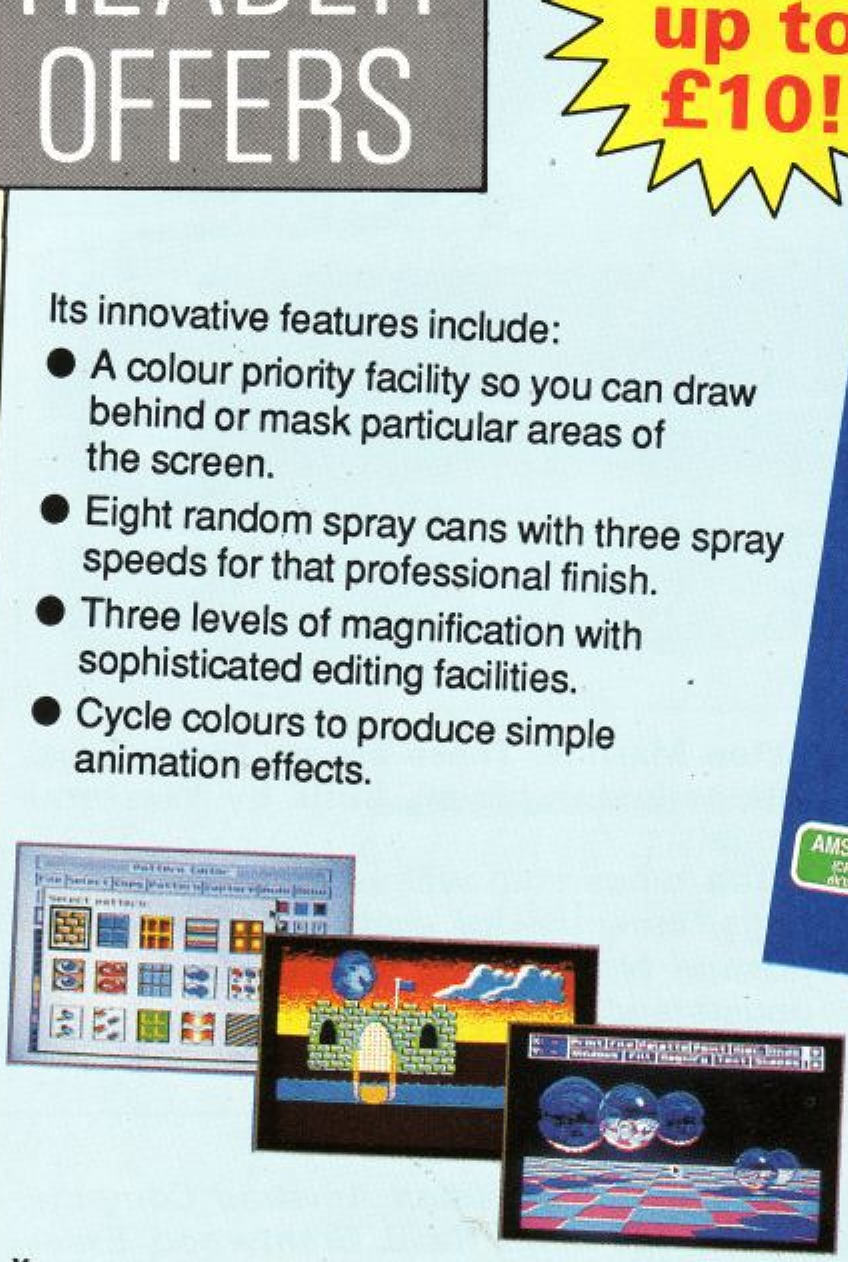
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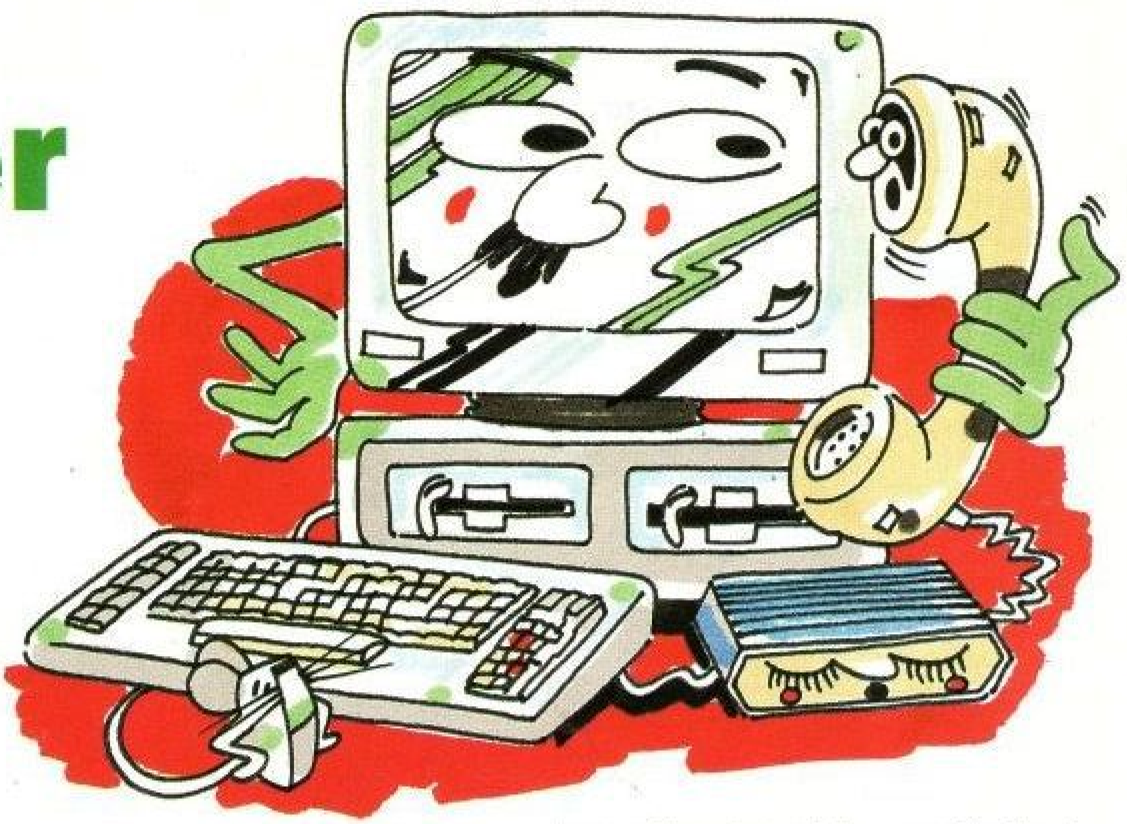
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Man over board



Paul Needs has some communications advice.

ONE of the more exciting innovations of the last few years has been cheap telecommunications. Whereas previously only the businessman could warrant paying out large sums of money for modems, comms software and the suchlike, now more and more home users have discovered that their world has been expanded by the purchase of a cheap modem, a serial (RS232) interface and software.

You will have seen the advertisements for Micronet 800 and Prestel, a service for which you have to pay a subscription charge.

But there are literally hundreds of free systems for the modem owner to explore here in the UK. They are seldom advertised, run by comms enthusiasts for the benefit of others, and are called bulletin boards.

A bulletin board system (BBS) is little more than a sophisticated database program. Files and programs are kept in ram or on disc, and these can be accessed by remote users who "login" to the BBS via a telephone line and modem.

Many systems have been written by Systems Operators (sysops) for their own use. More and more are being set up using Amstrad micros, and existing boards are beginning to cater for Amstrad owners.

Typically, a bulletin board will consist of several areas, the main one being a messaging board. Here, users can "post" messages for others, either passing on a useful hint or asking for help with a problem.

These areas, known as "Special Interest Groups" (SIGs) cover many different machines. Discussions cover many aspects of Amstrad use, and contributions come from all over the UK.

Scrolling (or Ascii) boards are still the most popular kind of BBS to be found. The incoming data moves down your screen, as if you were scrolling through a word processor file. All communication is in the form of standard Ascii (American Standard Code for Information Interchange) characters, unlike Prestel (Viewdata) type systems which have their own variation.

Although scrolling boards are not as colourful as Viewdata, they do often carry much more useful information, messaging areas and SIGs than their Viewdata equivalents.

To access such a BBS, you will need scrolling format software. There isn't a great deal of comms software available in any case for the Amstrad, but this is perhaps the area in which the micros are best served. The Commstar suite by Pace has a program called Honeyterm, which is suitable for these boards, and the Modem House Svensoft package also has an adequate Ascii program.

Users who like CP/M can use a program called MEX which is one of the most comprehensive Ascii terminal programs available for the Amstrad 8 bit machines – and it's free. Unfortunately, the Modem House and KDS interfaces cannot use MEX since CP/M doesn't recognise them.

Once into the system, you will be able to follow directions given in a series of menus and find your way around the board. You will be limited to how much time you can spend online, since most boards only handle one user at a time. Please don't abuse this!

Many boards now require a new user to register for higher privilege on the board. This means that you can gain access to areas that are normally hidden away from casual callers. Spend time learning the way the board operates, as this will pay off by letting you spend less time reading menus and more time reading what you want to.

Another approach to setting up your own bulletin board is to use software that has already been written, although many sysops will say that this approach takes most of the fun out of running a system. There are systems available to run under both Amsdos and CP/M. Some of the CP/M systems are in the public domain and are therefore available free to anyone who wants them.

Not all of the BBSs of interest to Amstrad owners actually run on an Amstrad machine. The most lively of such boards that I use regularly is TUG II, in Birmingham.

The system runs on a Tandy micro, with an array of one floppy and three 5Mb hard drives, using TBBS (Tandy Bulletin Board System) software. The sysops are Pete and Sandi Franchi, and the board is home to the West Midlands Amstrad Users Group (WMAUG).

Sandi told me some time back that TUGII initially took about two weeks to set up and debug, and also that it takes at least two hours work every night to keep it up to date. There are over 200 Amstrad users registered here, and there are several SIGs of interest too. These are specialised areas for those who have interests in Amstrads, CP/M and PC/MSDOS, as well as an area for WMAUG.

There is also a vast amount of telesoftware here, software that can be downloaded via the telephone line on to your disc drive. Again, this is for all Amstrad machines, and there is that absolutely superb comms program MEX (Modem EXecutive) which runs under CP/M for both the CPC and PCW machines.

Another board that is well worth a visit is MBBS Leconfield – it's a downloader's paradise. It has absolutely huge storage in the form of several hard disc drives, and hundreds of CP/M, PC/MSDOS, Pascal, and C programs. Whatever your machine, there is something of interest to you stored somewhere.

The board itself runs on a fairly typical MBBS software system, with the usual messaging areas that become a familiar sight after you've spent a little time on some BBSs. The goodies are to be found by typing CPM and entering on to the operating system itself.

All the files are categorised into various drive and user areas, and many are stored as compressed Library (.LBR) or

Archive (.ARC) files which contain all the necessary COMmand files for a utility or program to work properly.

The above BBSs are all of the Ascii or scrolling type. Recently, a few Viewdata format boards have been set up. Cynotel runs on a CPC6128, using the Svensoft/KDS interface and its built-in RSX commands. A Voyager 7 modem completes the line up, and a hard drive is to be added to this board shortly to make for more storage space.

The board hasn't been open very long, and the host software is still being developed, but the board has a great deal of potential, and has areas for PCW, CPC, PC and ZX Spectrum. Shortly, telesoftware is to be added as well in standard CET format, so do have a look around.

Name	Telephone	Speeds	format/word +
AMSTAR *	0403 732449	1200/75 & 300/300	8/N/1 Ascii
HILARY'S	0277 233468	1200/75 & 300/300	8/N/1 Ascii
CYNOTEL *	0323 647004	1200/75	Viewdata
Bulletin boards with Amstrad S.I.G.S.			
ANWUC FIDO	061 494 6938	1200/75 & 300/300	8/N/1 Ascii
TUGII *	021 444 1484	1200/75 & 300/300	8/N/1 Ascii
CHILTERN BB	0767 50511	1200/75 & 300/300	8/N/1 Ascii
LECONFIELD*	0401 50745	1200/75 & 300/300	8/N/1 Ascii
THIRD WAVE*	01 883 35290	1200/75	Viewdata
ROS BB	0392 53116	1200/75 & 300/300	8/N/1 Ascii and Viewdata
MGBBS	0443 733343	1200/75 & 300/300	8/N/1 Ascii

+ 8/N/1 indicates a data word of 8 data bits, no parity 1 stop bit
Ascii indicates a "scrolling" BB.
** indicates featured boards.*

Figure I: Bulletin boards running on Amstrad machines

For this, and other Viewdata Boards, you'll need software similar to that you'd use to logon to Prestel. Again, Commstar has such a program, this time called Honeyview, and the Svensoft/KDS interface also has a Viewdata terminal written into its rom.

Another Viewdata board that has areas of interest to Amstrad owners is called Third Wave. Although it struck me as being a little on the slow side, it really looks promising for the future.

Pages are selected by in the * character, followed by the name of the page you require – a similar form of keyword search to that currently used on Prestel. Third Wave has an area called Soft Spot, which contains various programming tips, including how to set up your own RSX commands on the CPC machines. Also, the usual message area is featured, but of course this looks very different from those found on Ascii format BBSs, mainly because of colour and 40 column display.

So, there we have a brief look at some of the better BBSs for Amstrad users. If you do have a modem, give them a call and have a look around. If you haven't got a modem, and you're starting to tire of playing games consider a modem and RS232. It really does open a whole new world of microcomputing.

Home start

You may think that not buying a £25 accounting program is a good way to save money. David Foster would disagree.

HFP is the name given to a new "Home Finance Program" (hence the initials) by a company called Datavise from Co. Down, Northern Ireland.

Where most home accounts programs provide the facility to enter expenditure and total and summarise it, HFP attempts to help you to save and keep a record of your expenses. It does this by allowing you to forecast your expenditure under different categories.

As you spend your money, the balance forecasts are updated, letting you see when you are overspending and when spending should be restricted to cover anticipated future expenses.

The principles behind the program are sound. In correct accounting manner, it does not permit you to alter entries once they have been made. All corrections must be made by contra entries.

Datavise claims that the full benefits will be realised after using HFP over a period. The experience gained in previous years should help forecasting expenses. Unfortunately the editor would not let me delay the review for a couple of years to test the claims, so we must just accept that this is probably true.

The program is supplied on a single disc with a comprehensive manual in an unusually large and floppy, 64 page, A4 size ring binder. HFP runs under CP/M Plus and can therefore be used on the CPC6128 and the PCW range of computers. I tested it on both.

The manual is well printed and laid out and assumes neither knowledge of computers nor accounting systems. It starts with a general introduction to the program, followed by precise details of how to create a working copy, before clearly detailing how to use it.

Recommendations are made that you do not complicate the program by having a multitude of unnecessary headings. It is also suggested that entries are restricted to genuine payments out of accounts, rather than detailing every little out-of-pocket expense.

This is a sensible approach; it is the sort of thing that makes the difference between the system falling by the wayside due to the amount of work involved, or surviving over a period of time.

Getting started

The supplied disc includes a program to create a working disc. Datavise say this is the only way to create a working copy of HFP, so that if you need to create a new one, it's necessary to repeat the same procedure, using the original disc.

Each copy is supplied customised with the user's name, so presumably the program is only available from Datavise.

Setting up the working disc is simple. HFP does almost all the work. It is only necessary to follow the prompts to change discs and press a few keys. The end result is a disc that can be put in drive A at switch on and which will automatically load CP/M, followed by HFP (CPC6128 owners will have to type BARCPM, of course).

HFP is intelligent to the extent that it automatically configures itself to the computer, only requiring to know what printer is being used (or details of certain printer codes if the printer is not one of the listed ones) and whether a green screen or colour monitor is being used on the CPC.

On the PCW, it will arrange itself to copy certain program files on to drive M, when first loaded, to speed up operation in use. CPC6128 owners with only a single drive have to do a lot of disc changing when using the program, as HFP requires data to be stored on a separate disc.

The program is well presented and appears to be thoroughly error trapped. It is very menu and window orientated and all functions are accessed via menus, selecting the option with the cursor keys and pressing Enter. The lower part of the screen displays which keys are valid and Exit/Esc may usually be pressed in order to obtain on-screen help.

HFP has an IQ

Once into the main program, HFP again shows a degree of intelligence. When you start to type in a command, specify a heading or account, it anticipates the selection after one or two characters are typed and displays it for confirmation.

If you specify headings carefully it is rarely necessary to type more than one or two characters to select the command/heading you require, which saves a lot of effort. The displays of menus and keys available are similarly intelligent and only those options which are valid at any given time are displayed.

For example, when you first load HFP, only the options to open a folder or exit HFP are available. There would be little point in printing or viewing nothing, but once you have actually started to create your folder further options become available on the menus

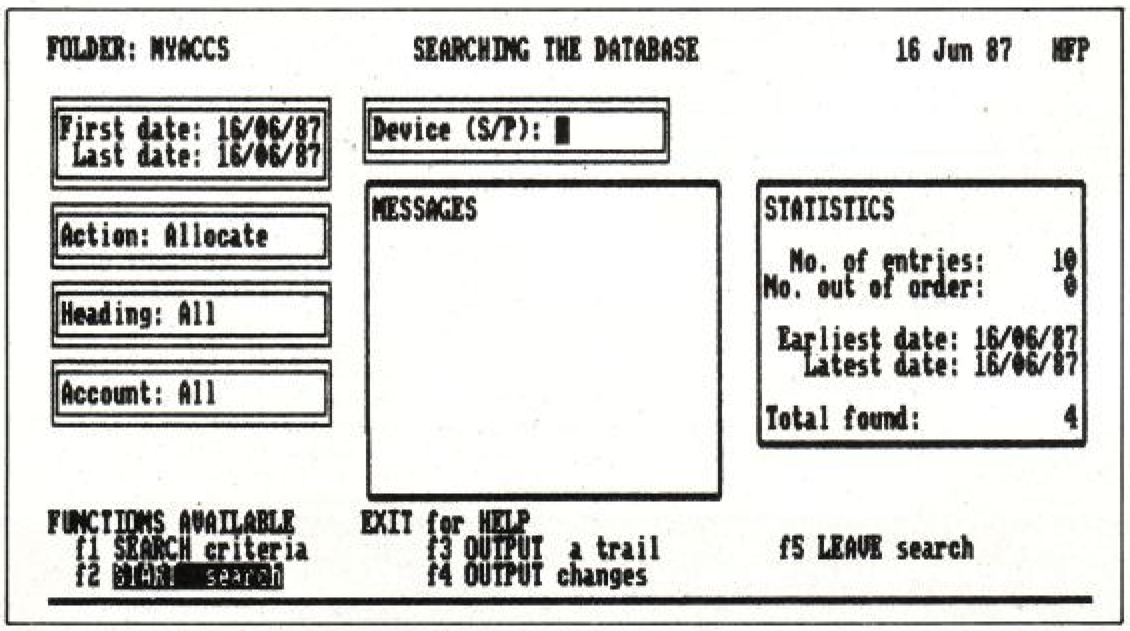


Figure 1: Looking up your record of expenditure

to suit. Once a new folder has been opened, the Utilities option is available and this lets you edit accounts and headings. In addition, you may customise the help screens to provide further information.

When you use HFP for the first time, it will be necessary to give details of the names of accounts, such as Bank, Credit Card and Building Society and specify the categories where expenditure goes. It is a good idea not to break things down too much also to specify the categories that expenditure is to be broken down into. It is a good idea not to break things down too much also to specify the categories that expenditure is to be broken down into.

It is a good idea not to break things down too much since you are limited to 16 categories. You may also specify which of three screen displays are to be used to show details of which account giving order in which they will appear.

A finance session

Having done that, you may start a Finance session. This is where you enter the information. Initially you are presented with an overview of the categories or headings, but by pressing keys 0 to 3 you switch between the other three display screens. The overview gives a listing of the various headings, analysed into the total amount spent, the budgeted amount, the balance of the budget still unspent, and the amount earmarked as an expense, but not yet covered by available funds.

The other three screens (you don't have to use all three) display things slightly differently. As with the overview, the categories are listed down the side, but this time they are cross referenced with the accounts. You can tell at a glance how much you have spent on each category and from which account.

The option to spend

Six commands are available, Budget, Allocate, Spend, Transfer, Move and finally Leave, and these may be selected by pressing the first letter of each command. Initially, Allocate should be used to enter up the opening balances into each account.

This command is used whenever new money is paid into an account. Budget is used to enter estimated expenditure and you must specify the account from which it will be paid and the category, as well as the amount.

Spend, not surprisingly, is the command used to enter amounts spent and the account that was used and the

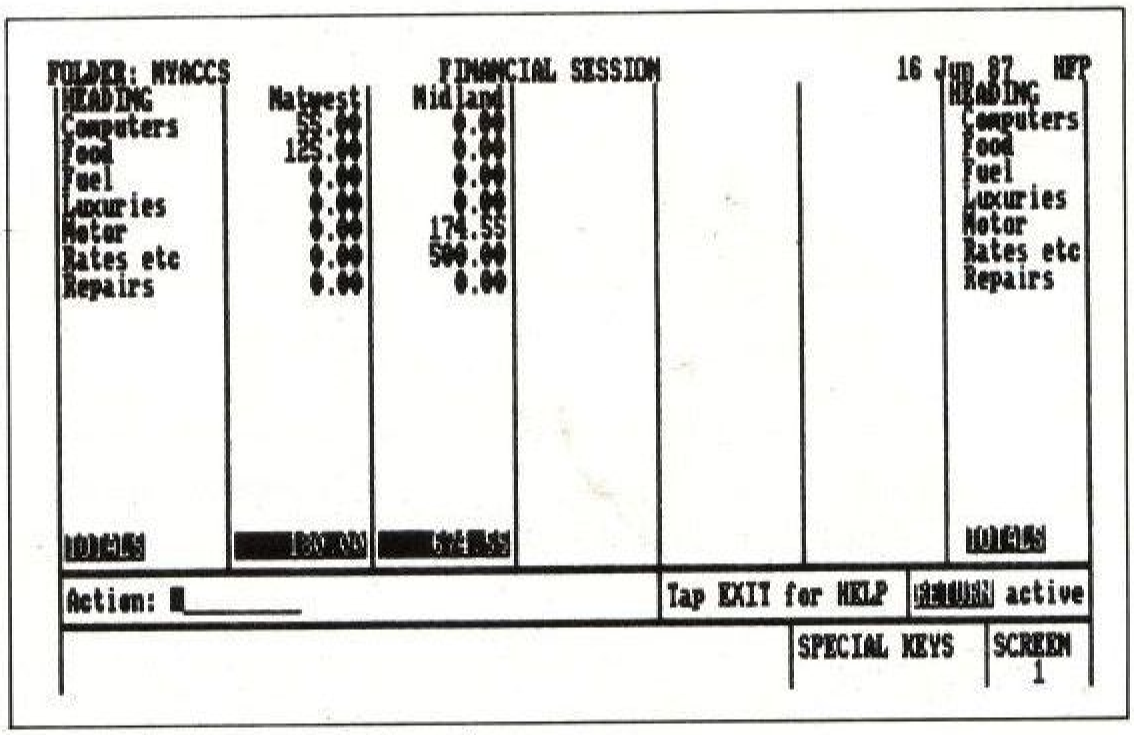


Figure II: Preparing the information

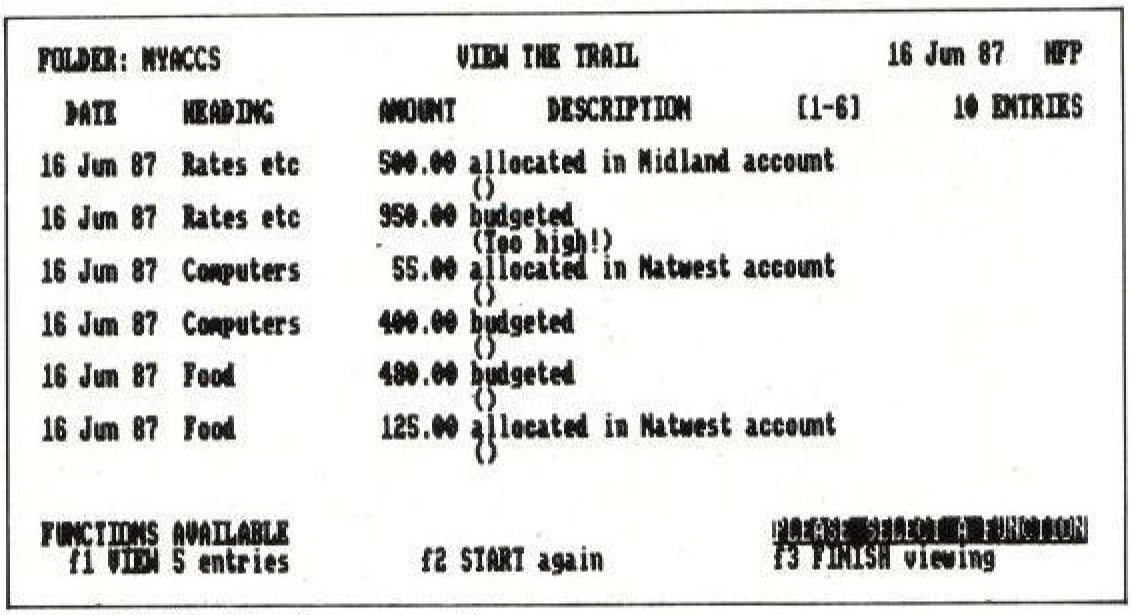


Figure III: Checking for overspending

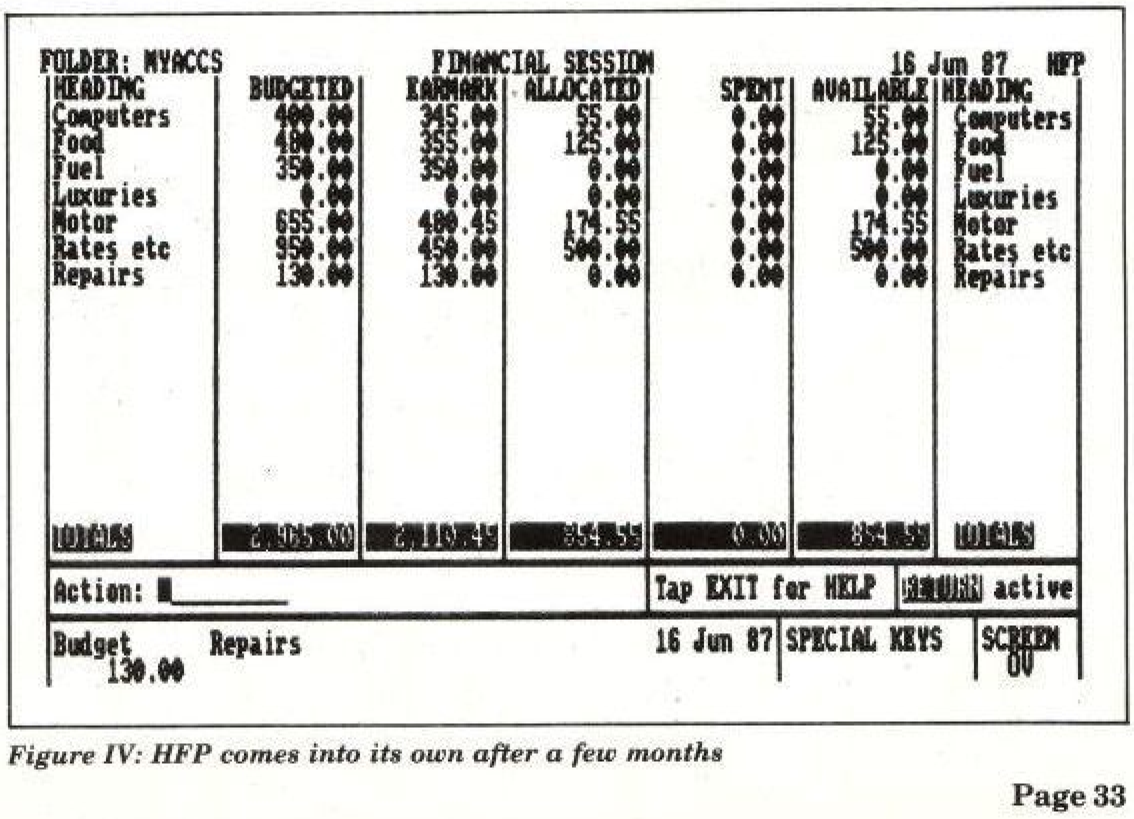


Figure IV: HFP comes into its own after a few months

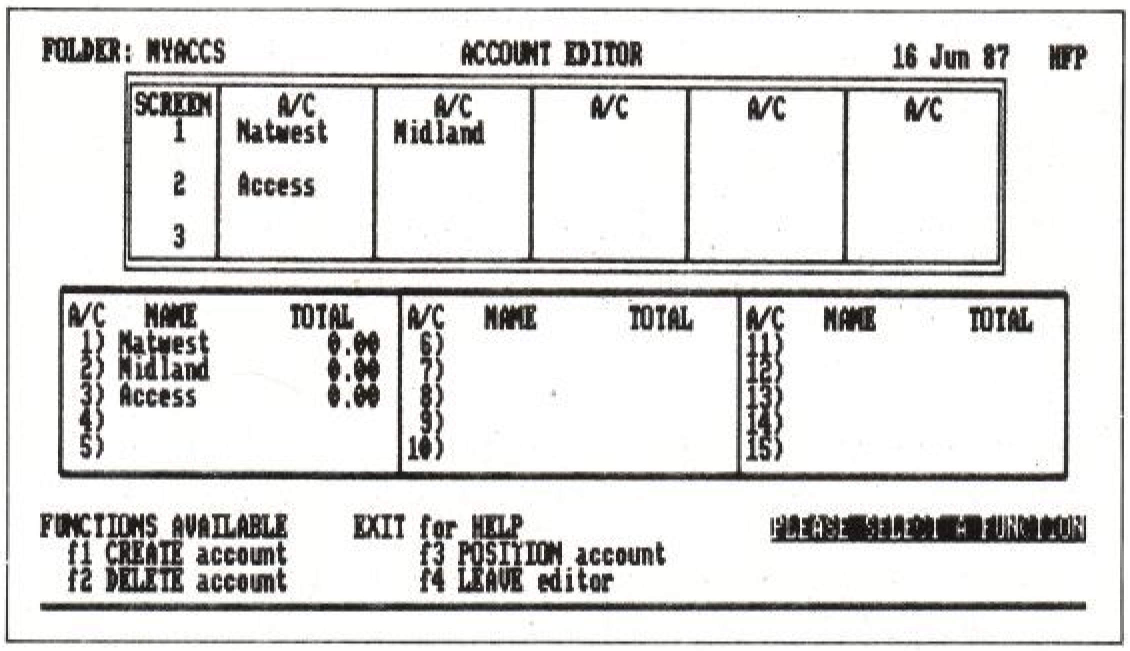


Figure V: Careful planning is needed to make the best use of 16 accounts

category of expenditure must be given.

Transfer and Move appear similar, but are very different in their use. Transfer is used to indicate the transfer of funds from one account to another, Move is used to transfer budgeted amounts from one category to another.

This last option does not have any effect on the amount of money in each account. It is merely a way of re-distributing your budgeted balances if you find that you have underestimated expenditure in one category and overestimated it in another.

At the end of each entry, you may enter a comment, this provides the means to expand on the precise expenditure. By default, HFP uses the date entered when the program is first loaded, In addition, it lets you specify another date, which allows you to enter any payments that may have omitted in earlier sessions. On completing a finance session, you may print out a trail of entries in the current session to the screen or printer.

Time to review the situation

If you want to study entries from an earlier session you must use the Database option. This provides a means to interrogate the folder and you may specify conditions, such as which account, which category or type of entry and the period over which the search is to take place.

Once the search has been made, the list of matching entries may be displayed on screen or sent to a printer. Alternatively, you may view or print a trail for a given date.

Conclusions

There are one or two features about the program which may be considered weaknesses, such as the fact that the program automatically assumes that the working disc is in drive A and the data disc is in drive B.

This is fine, even with only a single disc drive, as you merely switch discs as prompted by the program or CP/M. It does mean that PCW 8512 owners cannot store data on a CF2 disc in drive A and the program cannot be used from a hard disc, or any disc that is recognised as anything other than A or B.

Another criticism is that while a variety of printers may be used, there is no provision for anything other than single sheet A4 paper. It really should to be possible to use continuous stationery.

One point which mildly irritated me was that while the method of menu selection works well, it requires use of the cursor keys and Enter, when it would be easier to select the option by typing the first letter or a number.

The program is very pedantic about whether Enter or Return is used. Most of the time, Enter is used from menus, but on occasions, within the program itself, you are required to press Return. This means that you have to keep a close eye on the bottom of the screen to see which key is required.

Overall, the program gives a feeling of confidence and is easy to learn to use, with the combination of the thorough manual, the help screens and the way that the program prompts you at all times.

If you are looking for a program to keep a record of your finances, then this could be the one to choose. It has certainly got nearer to persuading me that a computer may be a viable way to keep my home accounts than any other program I have tried. **ACU**

Product: HFP
Price: £24.95
Supplier: Datavise, 20 Drumnaquoile Road, Castlewellan, Co. Down BT31 9NT
(Include a personalisation message with your order)

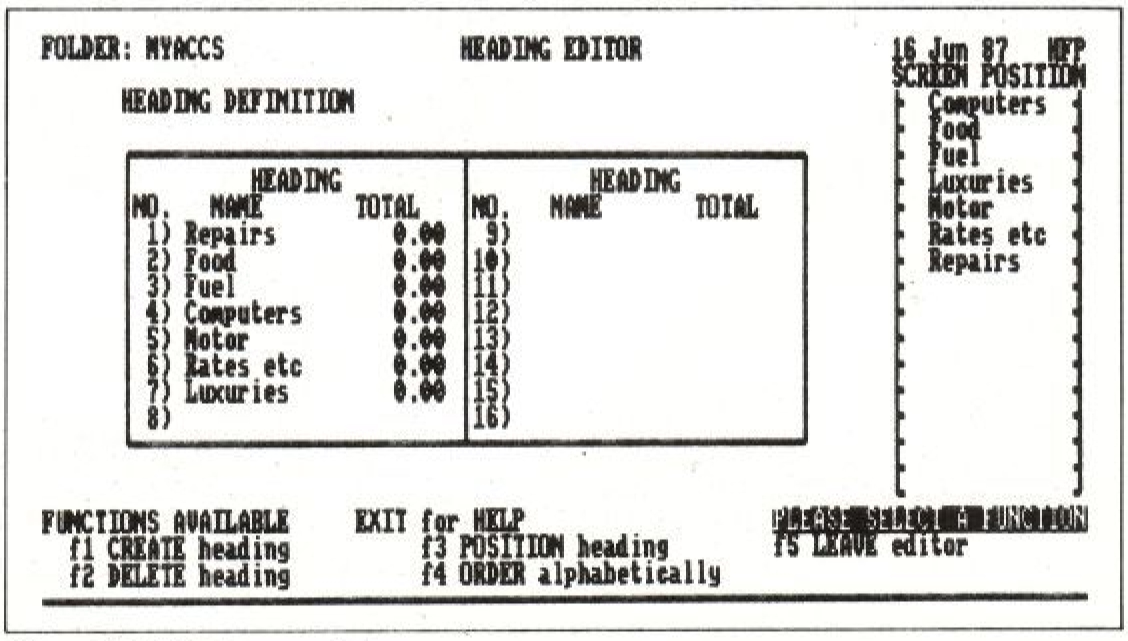


Figure VI: HFP is menu driven

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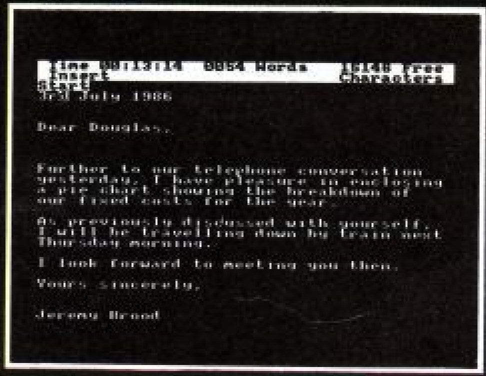
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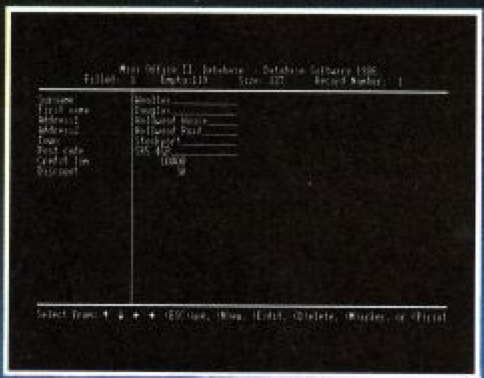
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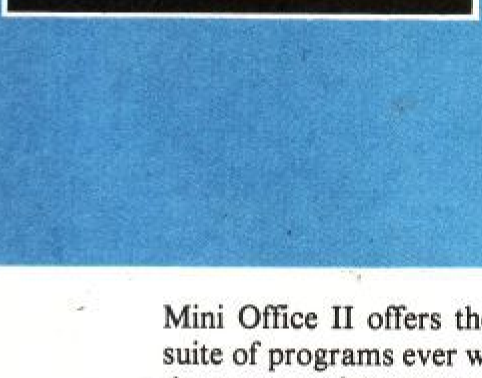
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Yet possibly the best advertisement for Mini Office II is that it comes from the same stable that produced the original Mini Office package back in 1984.

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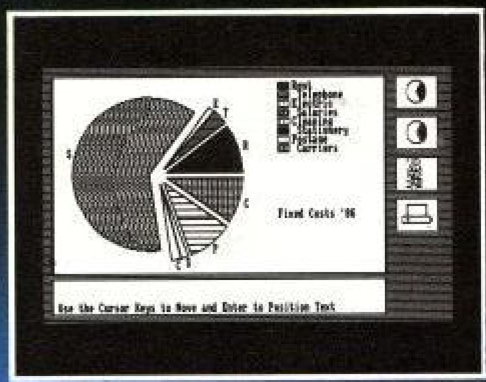
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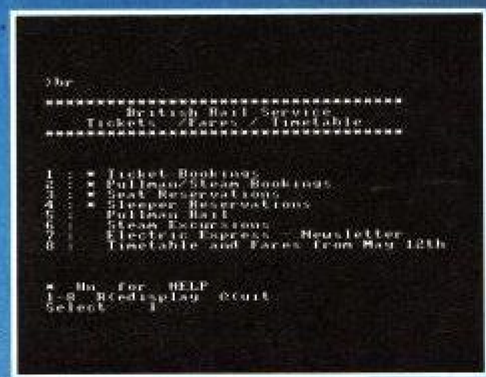
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ACUM09

JAMES BOND 007 IN THE LIVING DAYLIGHTS THE COMPUTER GAME

Simon Rockman sees some action

WHEN Domark announced that they had the rights to The Living Daylights, I shuddered. I couldn't help remembering the computer game of View to a Kill, an ambitious idea which fell short enough of the mark to scar Domark's reputation.

Still in a world where you are only as good as your last game, Domark has climbed to the top of the charts. Split Personalities is still one of my favourite games, but that is not what has put Domark where it is today.

It was Trivial Pursuit (TP), the game which wrecked a thousand friendships. Board game conversions are usually naff, especially if there is no computer opponent and with TP such a feature is impossible. Domark handled this with such skill and artistry that ACU gave it the highest ratings ever.

The Living Daylights belongs to the new school of Domark. A well designed, playable game, it manages to follow the plot of the film quite closely.

It would be impossible to review the game without explaining what happens in the film. Three double O agents are sent on a practice mission. They have to penetrate the defences of Gibraltar. The SAS are there to protect it.

Both sides are armed with paint-firing guns and any hit registers as a kill. The two other agents are knocked out quickly, but when Bond finds that the fake killing is not quite so fake he realises that there is a real baddie on the prowl.

It is Bond's defeat of the assassin, and his escape from a sticky fire and watery death which is the highlight of the film. The credits, with a totally unmemorable song by A-Ha, follow.

The title screen shows Bond and friends parachuting into Gibraltar. The game opens with a solo JB running past paint touting SAS men.

You control both his running and firing. Using a clever joystick control system you can move the cursor off the right hand edge of the screen. This causes Bond to run, pushing up makes him jump and down causes him to roll. As he runs 007 must look out for boulders and jump over them. The energy meter is depleted if the Secret Service sprite is shot or trips over a rock.

Shooting at SAS men is tricky, a bit like the Sniper game published in *ACU* a while back. Running away is not the answer, blasting the fire button is much better. When he reaches the end of the screen Bond must deal with the assassin. Here the target practice on SAS men comes in handy.

Switch the paint pistol to a trusty Walther PPK. In an earlier exploit Bond would have gone for a flat .25 Beretta with a skeleton grip, but after the silencer jammed it was banned by M who, dismissed it as "a ladies gun".

So in the game it's a Walther PPK, no doubt of 7.65 mm calibre pulled from a Burns-Martin triple-draw holster, a feat achieved with some more clever joystick juggling, and move the cursor down to the bottom right to toggle between weapons. Then it is back to Q's Workshop to rearm.



It is here that Bond sees the Ghetto-Blaster, a shoulder, launched rocket disguised as a Brixton briefcase. But for the next assignment 007 heads for the Lenin People's Music Conservatory. In the film he uses a custom built Audi 200, because Audi paid for its appearance. In the game it is the magic of computing which transports him across the world.

You are outside the conservatory and have to help Koskov, a defecting Russian, escape. He is protected by KGB snipers and you must shoot them without killing innocent onlookers. Night glasses are needed to distinguish who's who.

The trip to the West is in a gas pipeline. In the film this is done covertly, a female distraction being used to prevent the pipeline foreman from noticing a senior Russian soldier climbing into a barrel.

Unfortunately things are not quite so simple in the game. Guards throw pipes at you, so

you'll need a hard hat, and low pipes can give you a dreadful headache – pull down on the joystick to tumble beneath them.

Once Koskov is rescued Bond takes him, and the Aston Martin Volante to a county mansion for debriefing. The KGB moves in to retrieve Koskov and sends Necros, a secret service man who has muscles in places where I don't even have places.

In an excellent bit of the game Necros throws TNT – laden milk bottles at Bond while a helicopter hovers overhead. Koskov is abducted.

In the film Bond then rescues Kara and they escape in an Aston Martin saloon and a cello case. I bet music lovers get a good deal more upset about a bullet hole in a Stradivarius than car lovers do about the destruction of one of the world's most expensive cars. I feel that it was a mistake to skip these scenes from the game.

The escape is to Vienna. Kara is a Tiffany Case type character – the only girl in the film with whom Bond has a liaison. Perhaps they were having trouble selling anything with sordid scenes overseas. In Vienna, Necros is on the prowl, he may not be working for the KGB after all but is just as deadly.

Bond is assigned to rescue Koskov, tracked down to Tangiers and after a rooftop chase, in the film he is caught. In a plot to buy drugs with diamonds Bond and Kara are flown to Afghanistan, where they smash the drug ring with the help of local rebels, and escape the clutches of the Russians who are in cohorts with the real baddie, Brad Wittaker.

It is in Wittaker's house that the final showdown takes place. Uncharacteristically for a Bond film there is no big final explosion, but then we've already had a few of those.

Conclusion

The game is well programmed by Design Design, now renamed Walking Circles Software. This shows in the energy meter which also featured in Dark Star and the truly wonderful Tankbusters.

The sprite animation is excellent, there must be a huge number of frames. The three level scroll is difficult to program, even with the screen shrunk, 12k is still a lot to shift.

I am not very good at shooting games but still enjoyed The Living Daylights. Perhaps seeing the film helped, as it is much easier to believe in a bunch of pixels sprinting across my bedroom if I've seen a film explaining what is going on.

It is good to see that film tie-ins don't have to be naff, you'd miss out but it would be perfectly possible to play the game without going to the movie.

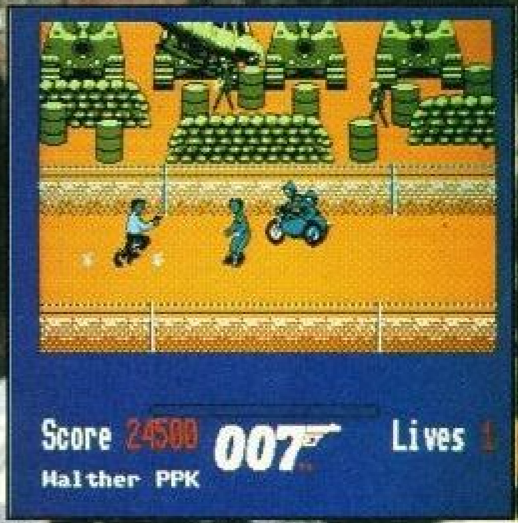
The film is, like any other Bond film, primarily all action and little plot. Many a wiser film critic will ponder over the merits of the various James Bonds. A bit like thinking that Jon Pertwee was the best Dr Who.

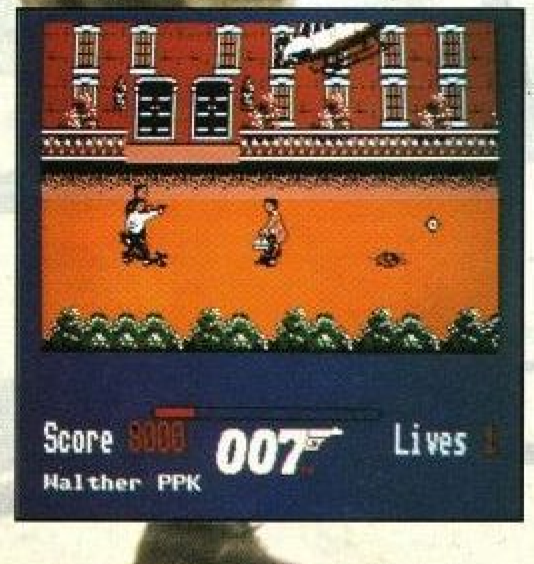
I am not too keen on the new man, Timothy Dalton. He is too short, too smooth and not Scottish enough. Some of the back-projection is too obvious for a modern film, but Maryam d'Abo, who plays Kara, and the Aston Martin are good enough reasons for going.

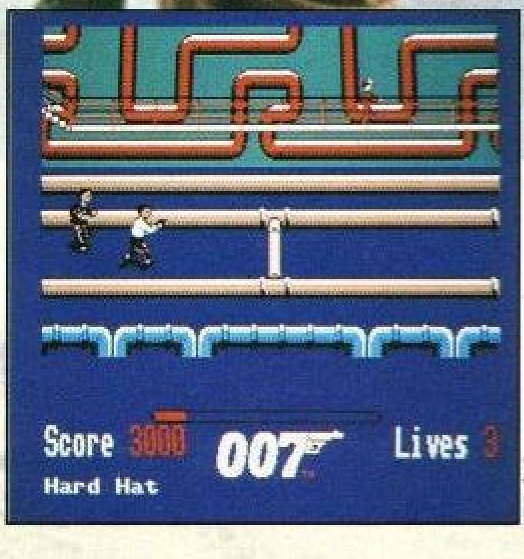
Perhaps Bond films have moved so far from the books that such a comparison is not fair, but I prefer Ian Fleming's Bond to Albert Broccoli's. That said, it is an all-action film – see it before you buy the game.

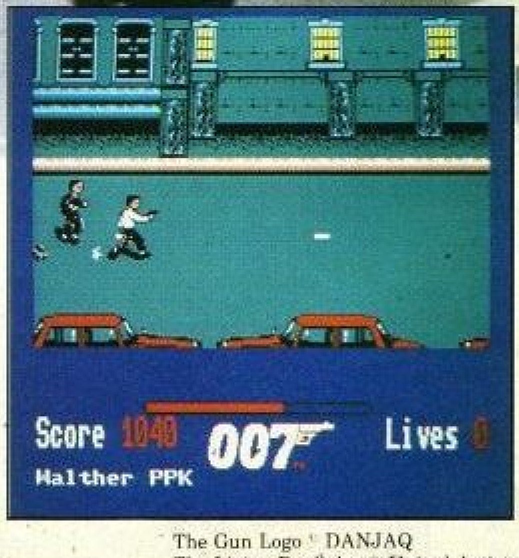
The game is great; buy it after you've seen the film.

ACU

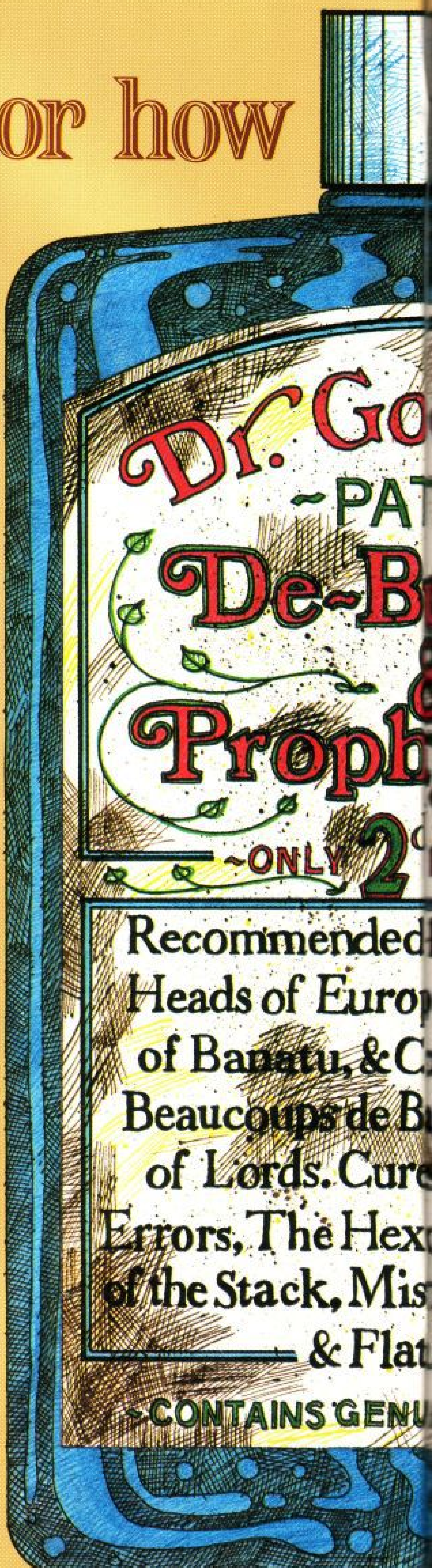








ACU bug control...or how



If your program doesn't work then this advice from Rupert Goodwins should help phind the phault.

IT happens to the best of us. Three hours of typing, and the latest magazine program is in and saved to tape. With trembling fingers, the magic word RUN is sent scurrying into the guts of the computer.

Through the mists of incipient VDU blindness appears not Roland goes Pigging but – horror – the demon Syntax Error. It cackles "Type Mismatch in 7750".

Lesser mortals break down in tears at this point, or (more usually) half an hour and 17 similar incomprehensibilities later. *ACU* readers know better. They know how to treat an Unexpected Return better than Becker.

It doesn't matter whether the listing has been typed in incorrectly, or whether there was a mistake in the magazine (never in this magazine, of course. Our highly trained, shark-eyed, computer-literate proof readers never miss a flfghdlgh). With a little intelligent application of TRON, even the most stubborn bug can be shifted in seconds.

The first clue in tracking and eradicating the bug is the error message itself. Basic isn't overendowed with messages, and some of them are unfriendly even by Amstrad standards. That Unexpected Return, for example, means that a subroutine has been entered by a GOTO instead of a GOSUB, or just entered in the normal RUN of things.

The problem is probably not (as the manual says) that "A Return command has been encountered when not in a sub-routine". The bug lies not at the Return command, but an indeterminate number of lines earlier, at a point the computer has long since forgotten. An ideal candidate for TRON.

You should be able to spot where in the program the errant subroutine starts. If nothing else, there'll be a GOSUB or two to it. Remember the line number. Now TRON stands for TRace ON, and is fairly elephantine in its application.

Following a TRON command, every time the computer encounters a new line of Basic it prints out the line number in brackets, thus [2130].

Obviously, this is going to mess up any other screen activity in a major way, but for now we can live with this. First, RUN the program again, making sure you can replicate the problem. Then bung in a line at the start of the program similar to 1 TRON.

You can of course append a :TRON to the end of a suitable line, or place it some way down the program if you're sure that the preceding bits work AOK.

RUN the offending software. As if by some powerful magic, your screen will fill hundreds of square-bracketed line numbers, followed by that error message. Now it's easy. Read the list of numbers back from the last one, until you get to an occurrence of the first line of the subroutine (I did tell you to remember it).

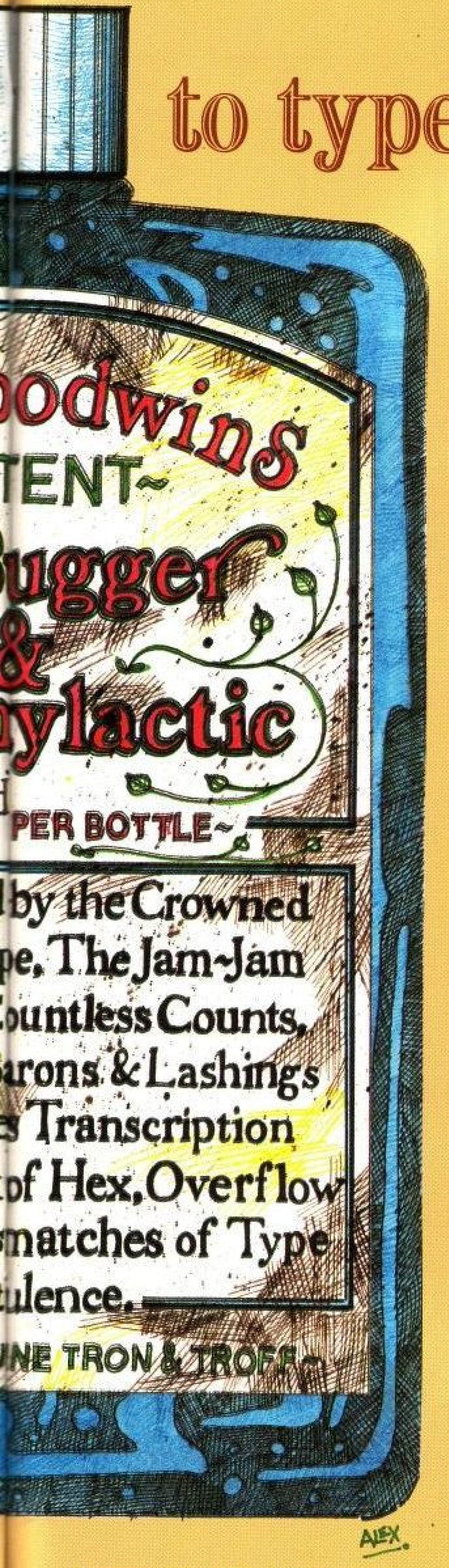
The line number before that is the one with the bug. A quick glance should reveal a GOTO instead of a GOSUB. If instead the line number is the one immediately before the beginning of the problem subroutine, then there's a missing GOTO, Return or STOP between the lines.

If consulting the program listing fails to shed light on the affair, you'll have to try to understand the way in which the program is supposed to work. Nasty, but good for you.

The same basic method can be usefully applied to the closely-related error, Unexpected NEXT. In this case (assuming you haven't mistyped or mislaid the FOR statement that should come before it), there'll be a GOTO which leaps into the middle of the FOR-...NEXT loop, and the first line number working from the end of the TRON listing that isn't in the loop is the villain of the piece. I'm sure you've got the picture by now.

Another fave crash is indicated by the popular Type Mismatch. This usually means that a $ is missing or unwelcome in a chunk of Basic (in which case the line number in the error message actually points to the line number

to type in listings



where there's a problem), or that a DATA statement is a bit odd.

This leads on to THE problem area for magazine listing freaks – the missing DATA item. (Actually DATA is plural, and since you wouldn't say datas item it should say datum, but try that in Basic and you'd have an error for sure). READ and DATA are wonderfully useful for spurting acres of hexadecimal machine code into the very bowels of your Arnold (what a wonderful turn of phrase).

Now homo sapiens might have evolved to do a lot of things, like chucking spears, eating Big Macs, talking, and dancing to Depeche Mode, but in terms of unnatural acts that mess up our cortex typing in hex listings comes pretty near top.

Huge areas of grey matter abscond during DATA statement generation, the concentration wanders and mistakes happen. And all the computer can say is DATA exhausted.

TRON can't help you here. It doesn't show the line numbers of the DATA statements being read in, and even if it did you couldn't guess what's missing. But even such horrors are amenable to that ol' man logic.

The first thing to find out is whether a whole line is missing, or just an item or two. Do this by bunging a false DATA statement on the end of the program, and add items until the error goes away.

If there's a CALL in the Basic which happens immediately after the DATA is read in, patch it out by putting a rem between the line number and the line. Otherwise the DATA statements (which are wrong) will generate machine code (which will be wrong) and the computer will go bonkers. Better still, put a STOP in the program just after the FOR... NEXT or whatever there is with the READ in it.

If there are more than three or so items missing, you've probably dropped a complete line. Best cure in this case is to check the listing – it should be easy to spot something that humongous has gone awry.

Less than that, and there's a bit of a slog ahead. If the person who wrote the program used a fixed number of DATA items per line, then you can engage in the traditional Binary Chop.

First, count the number of DATA statements. Divide by two, and delete all the lines past the first half – having previously SAVED the program, of course (cor, some people...). Then do a little FOR X=0 to N:READ A:NEXT X, where N is the number of DATA statements per line multiplied by the number of lines of DATA left.

Sounds complicated, but if you get an error this time, then the missing DATA items (or at least one of them) should be in the first half of the program. If you don't get an error, then the miscreant is in the second lot of DATA statements. Repeating the process, dividing the number of DATA lines by two each time, quickly reduces the area where the problem is to a hand-checkable list of lines.

Binary chop? Dividing (hence chop) the area under scrutiny by two (hence binary) successively. The technique can be useful in lots of other areas, most notably where an unknown bit of program is doing Something Nasty.

By eliminating half the remaining program at each debugging session, the bug's lair can be tracked down in surprisingly short order. But you do have to be disciplined and resist the temptation to go haring off after likely leads. Binary chops only save time if used with discretion.

If the DATA lines are irregular in length, and there's no sort of error checking in evidence, you have a problem. Lots of coffee helps. Some seemingly intractable problems can arise from CPC Basic treating undeclared variables as zero or empty strings.

This goes as far as DATA 1,2,,3,4,5, where the double commas will be interpreted as containing a zero, because the computer can't find a real value there. It's only trying to be helpful, but many a mysterious crash has occurred by phantom zeros floating into otherwise impeccable machine code.

There are many other problems lying in wait for the tired, the distracted, the shaky of finger when listings get typed in. Most of them, like those discussed above, can be cleared up with a little logic. Or, failing that, a snotty letter to the Listings Editor. But not to *ACU*. We never make mistakes. It says so in this article.

ACU

CAGE PAGE

One of the most exciting areas for Amstrad debate is 'Amsters Cage, an area on Micronet's contributors section. You need a modem to contact it, but you can read some of the titbits of information in these pages. If you have a modem and a Micronet account then type *CAGE# to join in.

From ERIC DONAGAIN
SUN 07 JUN 1987 22:43

Remember a while back when I said the 1512 screen went blank but everything else still worked?, it just did it again.

What is happening is that the NV ram area is being corrupted, ie trying to print black on black!?. The prog that did it both times was RPED. Has Roland got a strange sense of humour do you think!?

He MUST have a strange sense of humour! First he puts a 7 bit port on CPCs then he makes Spectrum+3 port incompatible!

From IAN HOARE

I still don't get anything from |HELP with Amstrad RS232 driver. |ROMCAT has some results, but lists in reverse order, showing Basic not only in 0, but in ALL unused sockets! I didn't believe it and turned em all off to test! It does not tell me who wrote anything, let alone who made the T!

From DAVID FOSTER
WED 10 JUN 1987 20:55

The credits for the Amstrad RS232 rom read like the Who's who of Amstrad. Written by RP and illustrated by Alex Martin. Electronics and drivers by MEJ Electronics. Programming by Amsoft. Printer redirection, Prestel and TERMINAL by David Radisic.

File transfer (including the dubiously named SUCK & BLOW) by The Hairy Hacker, Concept by RP Consolidation and ROM housekeeping by Cliff. Edited by Ivor Spital. Published by Amstrad and typeset by Kamset! Phew. Talk about a committee effort. It doesn't say who made the tea though.

From CLIFF LAWSON
MON 15 JUN 1987 17:57

Do I really have to spell it out...

|ROMCAT, –1 Signed, Cliff

Geee!!! Yes! You did! Did you spell all the names right? I thought it was Vic Oliver!

From DAVID FOSTER
WED 10 JUN 1987 20:55

I can't entirely agree with you about NSWP being quicker always. If I have a number of .COM files I wish to set Read only and Sys, then I just type SET *.COM (SYS RO and bingo, all done. With NSWP, unless I am mistaken, I have to load NSWP (optionally specify *.COM), use W *.COM, then Y and specify the flags I want set.

That's fine, but it certainly isn't quicker and if any of the files have other attributes set and they aren't all the same, it will reset all those not specified.

You have of course got a good example for your case with SET! What you seem not to acknowledge is that within the same prog you can tag those files with USER attribute 4 set, set them all to RO and then copy with CRC verification to another disc! Having done so, you can erase them.

From DAVID FOSTER
THU 11 JUN 1987 01:25

Great. I love copying programs to another disc, so that I can erase them! Only joking. I know what you were trying to put over.

I did concede that there are certain things which can more easily be done with NSWP, but my point was that many can be done more simply with the supplied CP/M progs.

Take PIP. With almost the same syntax I can copy files to different groups/discs/send to the printer (with or without page breaks)/send to screen or RS232. I can split or join files/copy only those files changed since last time/add line numbers/convert tabs to spaces/change lower to upper case and vice versa/verify files and much more.

What other program can do all that and all for the effort of learning the meanings of about 20 letters to use as parameters. Similarly DIR can be made to display the directory in whatever way you want. Signed, David

I agree that PIP is powerful, but I find the power AND versatility of NSWP is more real use than PIP's ability to do things I never want to do!

From MR J H RAWNSLEY
FRI 12 JUN 1987 19:33

My CPM+ profile.sub copies pip, nswp & submit to the ram disc as well as a file containing the four bytes 1B 45 1B 48. It is called cls and TYPEing it clears the screen.

The only way I could write it was by pip cls=con:. On the other hand I would not give up NSWP's tagging facility - saves a lot of typing. So I constantly use both.

Nice point, John. I throw files around a hell of a lot and find that the tagged copy with CRC is a great timesaver.

From CLIFF LAWSON
SAT 13 JUN 1987 15:57

I was interested to see that you were

"astonished" at the idea that home computers might not exist in 10 years. The move to specialist machines for specialist jobs has already started.

If you want DTP then you can do it on a PC but most serious systems are purpose built. Obviously you say that you wouldn't buy a specialist machine for WP – cos you are a hobbyist, but they are a dying breed.

Cast your mind back five years and you'll remember that we all soldered our computers together from a kit and programmed the 256 bytes with a hex keypad. If such revolutionary changes can occur in the last five years why shouldn't we see even more remarkable changes in the next 10?

The main reason people buy an all-round PC or whatever to do a bit of everything at the moment, is, I believe, purely cos they can't get a cheap enough solution to each individual need.

From M J HOWARD
SUN 14 JUN 1987 19:58

This is a new experience for me – disagreeing with Cliff. Not only can I not afford dedicated hardware for the various functions I use my 6128 for, but I would not have sufficient space for the number of individual machines! Apart from which I thought we had already achieved a good, workable solution to specialisation with a thing called SOFTWARE.

You know, you load your specialist application into your bog-standard (?) PC or what not and off you go. In any event, at a practical level how do I get all these things to talk to each other – through a standard RS232: standard?!

I still believe that the "home" micro PC or next generation will be the way forward for the home market.

Of course there are yet more untapped markets for manufacturers to exploit, and many of those will be for dedicated applications, but the home micro market will still exist and will still be lucrative for you and your boss.

Bet you a quid in 10 years time Amstrad is still selling a general purpose computing system to home/small business users - and I'll be buying it.

Yes, I am sure you are right. Can you imagine even with the falling prices of gear buying a wordprocessor like Joyce, a comms terminal, a dedicated Database a CAD package and then persuading them all to talk to each other! It would cost an arm and a leg! No, Cliff, I do hope that your bosses don't share your opinion.

From ANGUS M FRASER
MON 15 JUN 1987 18:49

This afternoon my DD1 refused to accept the presence of a disc despite numerous attempts. Does anyone either a)know what the problem can be? or b)know of a reputable repair service. Its a bloody nuisance!!

No idea at all. Cliff?? I have an even nastier one! I have had three discs in the last few days corrupted! Just the Directory I think. It happens in drive A but ONLY when drive B is connected. Now that isn't funny when compiling more that 180k of source!

From ANGUS M FRASER
MON 15 JUN 1987 23:14

Further to previous mbx. After many attempts and fiddling with the insides, the Disc Missing Error became the Read Fail Error! Tried several discs after that, only to find all but three would work.

I had to reformat one of these, but managed to salvage most of the other two. All had corrupted directories.

I've no idea how it affected three discs as only one was actually inside the drive during its Disc Missing phase. As to the original problem, I'm totally perplexed.

Strange thing happened when I was trying to fix the directories using Oddjob's Diredit prog.

After telling it is was drive A, it went whirr/clunk and gave me the now usual "Read Fail,Retry,Ignore or Cancel" so I pressed C, expecting to be either reset or dropped back at the Which Drive prompt, instead it started listing the directory, so I was able to erase the affected files. Rather odd!

You have described exactly what happens to me. I did the same and wrote the corrupt sector back in hope for later.

From MR S J SPICE
MON 22 JUN 1987 19:58

Can anyone help? I'm having trouble clearing the screen using HISOFT C and the form-feed printing control: ASCII 0CH under CP/M+. Any ideas?

I so detest their Editor that I will never use any of their compilers, so I fear I can't help! Is this on a CPC or PCW by the way?

CPM+ uses ESC E to do a CLS and follow with cursor home ESC H. I do know PCW needs some help to do CLS but that's all I remember.

From MR T J THOMPSON
TUE 23 JUN 1987 01:02

My PC1512 has just started acting-up. I can't get my printer to run with it any more. It keeps coming back with Write Fault error writing device PRN on the screen, but WWrriittee ffaauulltt eerroorr (etc) on the printer. I've tried another printer and lead; same problem. Both printers fine on the Beeb so what's up?? Anyone know a solution?

Ouch!! Sounds like an excellent diagnosis!! Any idea Roland or Cliff? I hope no one else has had same problem.

From MR T J THOMPSON
WED 24 JUN 1987 00:08

Further to my PC1512 printer problem, I have found that SHIFT PrtSc is perfectly OK. I get exactly what I see on the screen on paper. However, Ctrl P or COPY CON LPT1 all give Write Fault error writing device PRN.

I've also discovered that the 0 volt rail of the PC1512 is "floating" at up to 60 volts a.c. above mains earth (at a very high impedance). This 60 volts reduces to about 1 volt as you reduce the impedance to ground, but I still get a reading of 7mA to deck through the 15mA AC range on my meter.

This current flowing down my printer cable to mains earth via the 0v lead may account for the sudden demise of part of my PC1512 and the strange "hiccups" I get from both printers with PrtSc!

Now I don't want to raise the earthing thing again (shades of BBC etc) but I am a little peeved that I seem to have "killed" at least one chip in my PC1512. Thank goodness I haven't done anything to either printer.

Has Cliff any ideas as to why PrtSc works, but Ctrl P does not? I can only see strobe pulses when I use PrtSc, if that's any help. Tim.

Well, I've fixed my "faulty" PC1512 by desoldering and replacing a 74LS244 (it was of course the fourth chip I replaced that had died).

Now I can get back to playing with my new printer, or dive inside my video which after seven years is starting to act up too. Why do things all start going wrong at the same time?

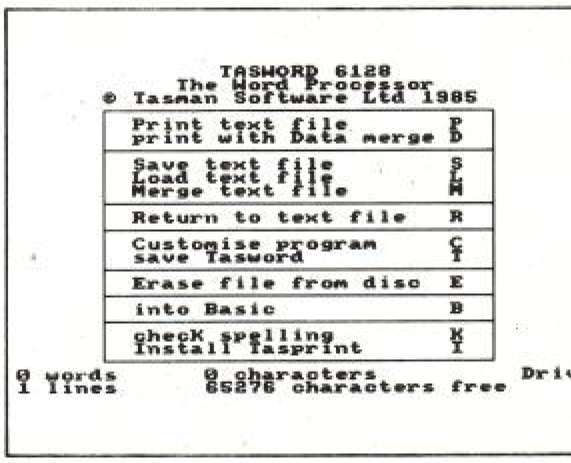
Law of Cosmic Cussedness (4th law of thermodynamics). I may regale you with formal definition one day!

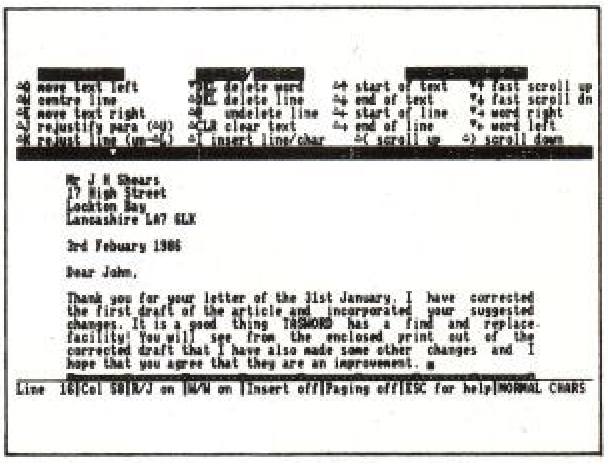
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TASWORD 6128

THE WORD PROCESSOR FOR THE AMSTRAD CPC 6128







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A powerful and easy to use word processor and a superb data merge program.
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TASWORD 6128 is the word processor especially developed to utilise the extra memory in the CPC 6128.
The program uses ALL the additional 64K of memory in the CPC 6128 as text space. This means that text files can be around ten thousand words long.
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TAS-SPELL disc £16.50 for the Amstrad CPC 464 and 664 running TASWORD 464-D and for the CPC 6128 running TASWORD 6128

Spelling mistakes and typing errors spoil any document whether it is a private letter or your latest novel. With TAS-SPELL you are free to be creative in the confident knowledge that your spelling won't let you down.
TAS-SPELL checks the spelling of TASWORD 464-D and TASWORD 6128 text files. TAS-SPELL has a dictionary of well over twenty thousand words which it compares with the words in your text. If a word is not recognised then the relevant part of your text is displayed with the suspect word highlighted. You can correct the word, ignore it (it might be a name), or even add it to the TAS-SPELL dictionary.
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TASWORD 464 and Amsword owners: send your original cassette or disc (not the packaging) as proof of purchase and £13.90. Your original will be returned together with TASWORD 464-D or TASWORD 6128 on disc.

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TASPRINT 464 cassette £9.90 disc £12.90

A must for dot-matrix print owners! Print your program output and listings in a choice of five impressive print styles. TASPRINT 464 utilises the graphics capabilities of dot-matrix printers to form, with a double pass of the printhead, output in a range of five fonts varying from the futuristic DATA-RUN to the hand-writing style of PALACE SCRIPT.
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POPULAR COMPUTING WEEKLY, NOVEMBER 1984

Your 464 becomes a professional standard word processor with TASWORD 464. Supplied complete with a comprehensive manual and a cassette which contains both the program and TASWORD 464 TUTOR. This teaches you word processing using TASWORD 464. Whether you have serious applications or simply want to learn about word processing, TASWORD 464 and the TUTOR make it easy and enjoyable.

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A suite of fast machine code screen copy software for the CPC 464, 664 and 6128. Print high-resolution screen copies in black and white and also large 'shaded' copies with different dot densities for the various screen colours. TASCOPY 464 also produces 'poster size' screen copies printed onto two or four sheets which can be cut and joined to make the poster.

TASPRINT 464 and TASCOPY 464 drive the following dot-matrix printers:

AMSTRAD DMP1	MANNESMANN	STAR DMP501/5/515	SHINWA CP-80
EPSON FX-80	TALLY MT-80	BROTHER HR5	COSMOS-80
EPSON RX-80	BROTHER M1009	DATAC PANTHER	AMSTRAD DMP2000
EPSON MX-80 TYPE III	NEC PC-8023B-N	DATAC PANTHER II	

Assembly on the move

A lot of ground has been covered on the writing of assembly language programs. This month Peter Green takes a look at running them.

THROUGHOUT this series I've been giving assembly listings for useful subroutines or stand-alone programs with very little discussion about their positioning within the computer's memory. Now it's time to consider the problems involved in loading and running large and small machine code programs.

The Assembly Point programs are all relatively short (yes, even the marathon triangle routine) and present no real trouble. If you flip back through the listings (you do cut out and keep them, don't you?), you'll see that, apart from a couple of special cases, they all start with ORG &8000.

The word ORG is not a Z80 mnemonic and does not generate a machine code instruction when the source code is assembled. Rather, it is a message (or DIRECTIVE) to the assembler which tells it that the machine code mnemonics that follow are to be generated to run starting from address &8000.

For example, a listing that began:

```
.SCR_SET_MODE   EQU &BC0E

ORG &8000

LD A,1
CALL SCR_SET_MODE
```

More mnemonics ...

would be turned into a set of five hexadecimal numbers in memory locations &8000 to &8004, thus:

```
&8000 &3E &01        ;Op code for LD A
                     immediate,
                     plus the number "1"
&8002 &CD &0E &BC    ;Op code for CALL,
                     plus address of
                     subroutine with low
                     byte first(the Z80
                     does things that
                     way!)
&8005 .. .. ..       ;More code...
```

If you now CALL &8000 from Basic, or jump to it from your assembler menu, the Z80 chip will start to execute the machine code instructions it finds at location &8000, and the screen will clear to Mode 1.

Incidentally, the EQU in the above example is another assembler directive, meaning "whenever you see the phrase SCR–SET–MODE in the listing, produce the address &BC0E in the machine code". As I've pointed out before, this use of labels makes programs easier to write, and much easier to read through afterwards.

Pick a number

You may wonder why I always choose &8000 as my starting address. Well, it's just that for speed of development on programs this size, I obviously want to keep both the source code (assembly listing) and the object code (the machine code program) in memory at the same time.

This means that I can assemble the source, test it, and after noting any bugs, return to the source and edit it ready for a new test. (This assumes that the bugs weren't so fatal as to crash the machine, and that I remembered to include a way to get out of the machine code. Remember Basic only responds to the pressing of the ESC key because it's programmed to.)

The assembler I use is Arnor's Maxam in rom, which means I still have most of my Amstrad's memory free. Maxam source code is held in memory starting at the bottom of the Basic area, address &170.

By using ORG &8000, I have almost all the bottom 32K free for my source text; and there's about 8K free for the machine code after allowing for the screen, firmware area and reserved ram workspace for my external roms, such as Maxam, Protext and the disc drives. Another point is that, during testing, &8000 is a nice easy number to remember as an address to call.

The more it grows . . .

This is all very well for the smaller program, but what happens when you start getting ambitious, and reach the point where there simply isn't enough memory for both the source and object code to reside in the computer at the same time?

It becomes necessary to make use of either the cassette or disc filing system, through the READ and WRITE directives (on Maxam – other assemblers may have the functions but call them different names. Check your manual).

The first option is to keep the source code on tape or disc, read it in line by line as required by the assembler, and generate the machine code in memory. It probably won't astound you too much to find that the READ directive does this job. In fact, using READ means that the actual source in memory can be as brief as:

```
ORG &170
READ "part1"
READ "part2"
READ "part3"
READ "part4"
END
```

with as many separate source files as you like. This approach is better suited to disc-based systems, though. Most assemblers require two passes through the source code – the first to establish the addresses of all the labels used, the second to generate the machine code.

With a disc system this is transparent to the user, but cassette owners will need to rewind the tape back to the start for the second pass. Worse, a really big piece of code can take a couple of minutes to assemble even from disc. Cassette users will find this method unbearably slow and boring.

The write stuff

The second alternative is to keep the source file in memory and write the object code to the filing system as it is generated during the second pass. A trivial example:

```
ORG &8000

.TXT_OUTPUT  EQU &BB5A

WRITE "trivial"

LD HL,message

.print
LD A,(HL)
INC HL
OR A
RET Z
CALL TXT_OUTPUT
JR print

.message
TEXT "This is a trivial example.",13,10,0

END
```

This approach is rather more limited than the previous one, because it restricts the source code size to a maximum of 39K or so on an Amstrad. If you write like I do, with copious comments so that I can remember what a piece of code is supposed to do, then a big program will require very big source files.

Since the assembler needs ram workspace to hold its table of labels and their corresponding values, it may be that your memory-filling game "Mega Pac Invaders From Beyond the Mutant Ninja Camels" creates a situation where neither the source nor object files can be kept in memory. Then you'll have to combine both the above approaches, thus:

```
ORG &170
WRITE "very_big"
READ "big1"
READ "big2"
READ "big3"
READ "big4"
END
```

Bear in mind that this method of reading in the source code from a disc file, and writing the object code out to disc as it is created, may be the only option you're allowed under some assemblers, especially on bigger machines such as the IBM PC and its clones where everyone has a disc drive.

The Amstrad filing system, whether cassette or AMSdos, now presents us with a further problem. There are two ways of writing a block of code to the cassette or disc.

If the code exists as a complete block in memory (ie you assembled into memory, instead of using the WRITE directive), then you can use the CAS OUT DIRECT entry in the firmware; from Basic with SAVE "filename",B,start,length, entry; with an RSX like Arnor's |SAVE; or with your own machine code save routine. This method lets you insert the load address and entry address into the file header, and the code can now be run directly from Basic using RUN "filename".

However, when a machine code program is generated byte by byte using WRITE, the firmware insists that the CAS OUT CHAR entry is used, to write the file to disc or tape one byte at a time.

CAS OUT CHAR doesn't allow either the required load or entry address to be added to the header, so the resulting file cannot be run in its own right. The Amstrad can't tell where it should be loaded, or where it should be entered.

In this case, you have two options. First, you could write a small separate loader program (either Basic or machine code), which in turn loads the bigger program into the right memory locations and jumps to it.

Obviously this loader should not be at a position in memory where the second program will load over it (unless you're trying little tricks to defeat hackers, as in the Spindizzy tape loader). Somewhere around the top of the stack area, &BF00ish for example, would be a good choice for a short machine code loader.

Your second choice is to run the file (generated using WRITE) through a "conditioner", which loads the machine code where it ought to go, then resaves it using CAS OUT DIRECT so that the proper header values can be inserted.

Listing 1 gives such a routine, safely located outside the region where any well-behaved program could be expected to run. The actual values for start, length and entry-point will all be given by the assembler when it WRITEs the file to be processed, length being (end address – start address).

Of course, dedicated hackers who love calculating checksums would probably prefer to convert the header by directly altering it, on disc, using a disc sector editor. But then hackers are all crazy ... ACU

```
LISTING 1

ORG &BF00
.buffer          EQU &C000     ;Might as well use screen memory as
                               ;buffer, to make sure it's away
                               ;from the program to be converted

.TXT_OUTPUT      EQU &BB5A

.CAS_IN_OPEN     EQU &BC77
.CAS_IN_CLOSE    EQU &BC7A
.CAS_IN_ABANDON  EQU &BC7D
.CAS_IN_DIRECT   EQU &BC83

.CAS_OUT_OPEN    EQU &BC8C
.CAS_OUT_CLOSE   EQU &BC8F
.CAS_OUT_ABANDON EQU &BC92
.CAS_OUT_DIRECT  EQU &BC98

LD B,6                  ;Number of characters in the filename
                        ;alter to suit

LD HL,filename          ;Address of name of program to convert
LD DE,buffer            ;Buffer area, 2K in size
CALL CAS_IN_OPEN        ;Open file for input
JR NC,error             ;but skip if error occurred

LD HL,start             ;Override incorrect load address in
                        ;old header by using required load
                        ;address (your ORG in the original
                        ;source code)
CALL CAS_IN_DIRECT      ;Load the file into memory
JR NC,error             ;Skip if error

CALL CAS_IN_CLOSE       ;Close the input file
JR NC,error             ;Skip if error


LD B,6                  ;Again, number of characters in the
                        ;filename
LD HL,filename          ;Address of name of program to convert
LD DE,buffer            ;Buffer area, 2K in size

CALL CAS_OUT_OPEN       ;Open file for output
JR NC,error             ;but skip if error occurred
LD HL,start             ;Start of code t
                        ;Open file for output
JR NC,error             ;but skip if error occurred
LD HL,start             ;Start of code t
                        ;Open file for output
JR NC,error             ;but skip if error occurred
LD HL,start             ;Start of code to save
LD DE,length            ;Length of code to save
LD BC,entry_point       ;Address to start running the code
                        ;(often same as "start", but not
                        ;necessarily)
LD A,2                  ;Mark file type as "binary"

CALL CAS_OUT_DIRECT     ;Save the file from memory
JR NC,error             ;Skip if error

CALL CAS_OUT_CLOSE      ;Close the output file
RET C                   ;Quit if no error

.error
CALL CAS_IN_ABANDON     ;Mark both the input stream
CALL CAS_OUT_ABANDON    ;and output stream as closed
LD HL,err_message

.print
LD A,(HL)
INC HL
OR A
RET Z
CALL TXT_OUTPUT
JR print

.err_message
TEXT "ERROR!!!",13,10,0

.filename
TEXT "SAMPLE"           ;sample filename, 6 letters long

END
```



Jeremy Clarkson ponders on his in particular Ball Breaker,

WE all have weaknesses. Some people drink too much, some smoke, some vote Labour and some, I'm told, do all three.

I gamble. It takes the combined might of the Four Horsemen of the Apocalypse to steer me past a casino without at least one limb poking through the door in a bid to find out about membership fees.

Over the years, my penchant for the gentlemanly game of blackjack has cost many Harold Melvins yet still, once the Heinekin has refreshed the wallet, off I toddle for an appointment with Ming, the God of everything that can go wrong in life.

Without question, the worst loss I ever suffered was at the Black and White Ball at the Cafe Royal some three or four years ago.

Some wise bottomed organiser had decreed that blackjack tables should be erected but they'd forgotten to order the Horsemen to keep my grubby paws out of the gaming area.

Thus, there I was betting away like crazy with the £5 worth of 25p chips I'd bought. To begin with, I won. And I kept on winning until the poor dear behind the table was forced to write out an iou because she'd run out of chips.

I have felt elation like that before but only rarely. I felt it when Red Alligator won the Grand National. I felt it when I passed my driving test. I felt it when I cast my virginity to the four winds.

But I came back down to Earth with all the ferocity of a buffalo in a balaclava when the kindly cashier announced I hadn't won a penny and that by coining in £400 or so, I had merely won a prize... providing no-one won more which was an unlikely scenario seeing as I had all the chips they'd brought.

It turned out my £5 stake had simply been a donation to some children's charity and I had been playing for fun. It is likely that the champagne bottle I inserted up the nose of that dear gentlemen is still there.

I don't even like children. Until they're two they are small pink and flatulent. Afterwards, they become big, pink and noisy. Then they buy motorbikes and terrorise the neighbours by doing wheelies and things. And to think I gave them £5. It makes me mad.

What really rubs salt in the gaping wounds is that my prize was one of those steam powered Atari video game whatsits which I'd seen for sale at about £90. I could have bought four with my winnings. Perhaps I should have pushed the cash register up his other nostril.

This Atari, however, introduced me for the first time, to games I could play; the secret being that you only need to make minute movements in order to be very good.

In football, cricket or hockey for instance, all four limbs are necessary for one to have a chance of not being ridiculed in the showers afterwards. And I simply cannot coordinate more than two muscles at once.

This explains why I am a quite awful driver and why, when I once took a penalty during a game of football, the nearest the ball got to the goal mouth was when it was on the spot.

Space invader type games, however, require the use of only two or three fingers and I can do that. Sort of.

There was one, a game called Scramble, in my local pub which took, oh it must have been one hundred of my pounds over the years, but I became so good, I could play it for ever and could never be beaten till my beer went flat.

Comparing this type of game to the Atari did, however, instil in my bonce the notion that the home computer type video game is a fuzzy mish mash of simplistic nonsense and that the real games for arcade groupies like my good self could only be found in the corners of pubs that have rust round the optics on their gin bottles.

To a certain extent, I still believe this is so even though I've spent the last week glued to the screen of my Amstrad playing what I'm told are a selection of state of the art home games.

The 'phone has rung, people have knocked on the door and I have ignored the produce of she who is able to create a culinary masterpiece from two bits of old lemon peel and half a can of Lassie. These, you see, are trivialities to a man who is desperately trying to find out just who it was that mucked up his spaceship and warped space. Whatever that means.

AMES

feelings for computer games, Krakout and Arkanoid.

I have been trying to learn the intricacies of three games, all of which cost about £9 in cassette format and all of which run along a similar theme.

The idea is that you control a bat and knock a ball against a series of whatsits in order to reach a more difficult level.

I can start off straight away by revealing that Arkanoid is by far and away the best.

Krakout has ill defined graphics and a sort of Tangerine Dream sound track while Ballbreaker is bloody impossible.

I shall therefore begin with the best. Arkanoid is derived from an arcade game and is clever in that the picture is border free and well defined.

The game itself is perhaps nothing too remarkable until level three anyway which is as far as I can get. However, it does have drawbacks.

There is an interminable wait before games commence and to keep us "entertained", the machine plays awful music which is quite out of keeping with the legend that rolls across the screen.

"The time and era (tautology) of this blah blah blah are unknown blah blah trapped in space warped by someone", it says.

For a kick off, this is exactly the sort of script you expect on the trailer for some dreadful sci fi film and usually it is spoken by that American Mr Kipling character who earns a mint from Denim commercials and the like.

It just doesn't fit the rinky dinky, Radio Two type music that accompanies it. If there was some way of collanderising it, I could play Arkanoid for the next year or two, pausing only for calls of nature.

While this music is incongruous and lengthy, the soundtrack on Ballbreaker is absolutely terrible. I should like to meet the man who wrote it. I should like to gouge out his eyes with a mobile telephone.

For a start, it sounds just like every record in the charts at present with its pounding disco beat coupled to an endless noisy monotony. If you like Houston Whitney or whatever that big lipped woman is called, you would probably enjoy it but I don't and, as a result, I couldn't concentrate on the game properly.

Secondly, the whole thing is laid out in 3D which made my eyes go funny and thirdly, in order to get from stage one to stage two, which I managed only once, you have to sacrifice a life which seems a bit dire.

Only moments after reaching stage two, I was gobbled up by a large, green frog which seemed a fitting end to a rather poor game.

Krakout is much better largely because, before the whole caboodle kicks off in a flurry of song, players are asked to choose the level of difficulty they think they can handle.

To begin with, there's time to hit the ball, make a cup of coffee, drink it, see a film and be back at the screen in time to hit it again.

As my confidence grew, I asked for the most difficult level. On this exalted plinth, I saw a brief flurry of graphics then the screen informed me the game was over.

It was a bit like asking Nicholas Witchell, that orange haired newsreader, to don a blindfold and take on Mike Tyson.

In the intermediate stages, the game progresses well though with more than a hint of zzzzzzz. If you can get your ball round the back of the objects you're trying to hit, it just ricochets around with gay abandon, doing all the dirty work without the player having to do a damn thing.

Of course, it does have a habit of lunging back in your direction just when your eyes have strayed from the screen, through the window and on to a pretty girl who is, or ought to be, on her way to a bra shop.

Furthermore, there were occasions in Krakout when I hit the ball with my 'bat' only to be informed with all the tact of a hole in the wall cash dispenser that I'd missed it.

Like the latest in Barclay's technology, there's no arguing. You have to sit and fume while it plays another tune from its limited Tangerine Dream repertory.

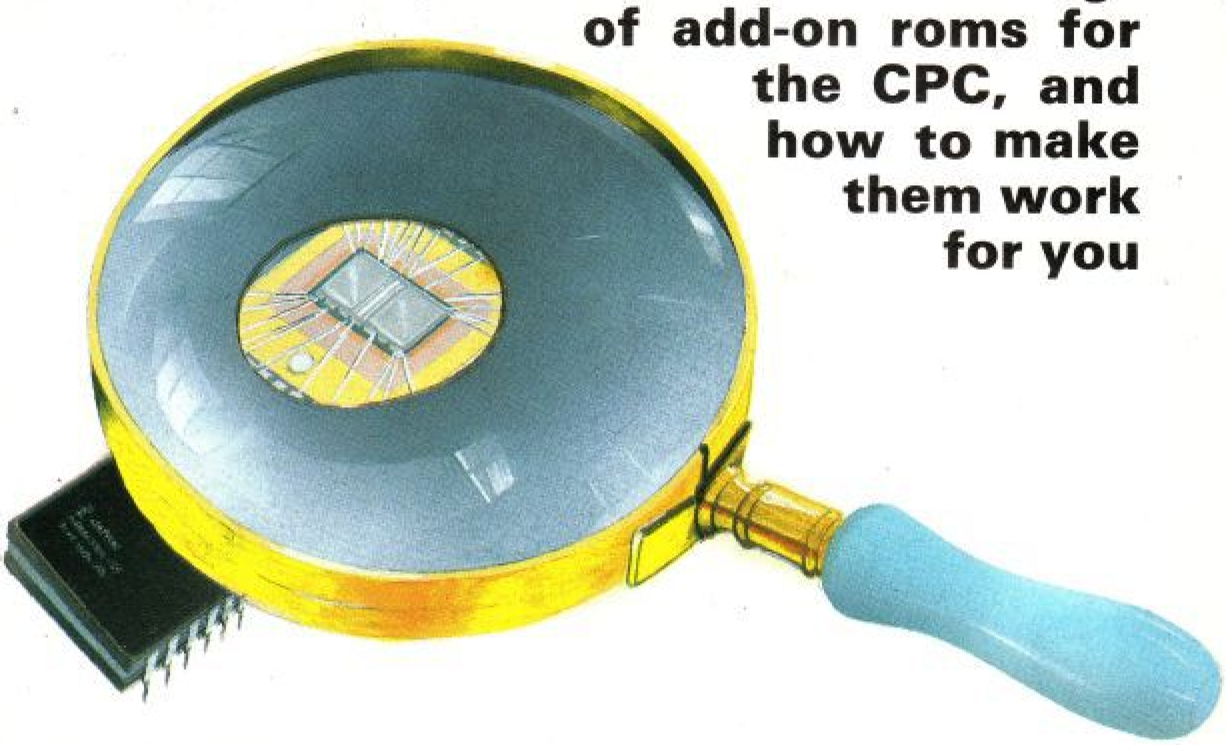
If you bear in mind that a car is a car is a car and then you're asked to choose which you'd rather have; a Ferrari, a Nissan Cherry or a Yugo, you wouldn't have much difficulty finding the answer.

Choosing between these three games involves the same level of brain strain.

ACU

Investigating CPC roms

Richard Sargent looks at the workings of add-on roms for the CPC, and how to make them work for you



ROMS, like small children, should be seen and not heard. *(Hey that's a bit ageist – Ed).* OK, they should be recognised (at least by the computer), they should work (with all CPC models) and they should not clash with one another.

Most of the time they behave themselves, and this is particularly so of the internal roms. Rom 0 (Basic) on the 464 and roms 0 (Basic) and 7 (CP/M) on the 6128. If they didn't work the computer would be dead anyway. So you take them for granted and perhaps occasionally use routines inside them by calling a jumpblock address taken from the Firmware Spec.

No fixed address

The sideways roms, those which hang out of the back of the computer and which you have to buy, are much more interesting because they have to be fitted in a rom slot of your choice. And you get a manual with the rom which explains all the glorious | commands available.

You are not told the addresses of the | routines because they may change from one month to the next as newer versions of the same rom are produced. Writing and debugging software takes time – rom wasn't built in a day.

Exactly why you may need to obtain and use, quite legally, the starting address of one of more routines in sideways rom will become clear in a moment.

Collecting roms is habit-forming. You need a rom box to house just one off-the-shelf rom, and this peripheral is likely to have six or eight blank rom sockets in it. No hardened hacker can stare at an empty socket for long – to the computer techie it's like a newly hatched chick, mouth open ready to be filled. The purchase of roms tends to accelerate to fill the space available.

Before long you will find you have a rom with a |HELP command which lists all your roms, and a |HELP,n command which will list all the | commands of rom number n. |HELP,n is provided as a memory aid to relieve you of the need to consult the manual. *(It is not – there to allow you to pirate the software without the instructions – Ed).*

Assuming you have a |HELP command, typing |HELP,7 lists the 14 commands of the CP/M rom, which are |CPM, |DISC, |TAPE and so on. Listing II prints the command names and the addresses of commands from rom n, and so takes us a little further forward.

```
;LISTING 1
;INVESTIGATE A SIDEWAYS Rom
;BY MOVING ITS CONTENTS TO &4000

    ORG &8000

    DI
    LD C,2 ; INVESTIGATE Rom NUMBER 2

    CALL &B90F
    PUSH BC
    LD DE,&4000
    LD HL,&C000
    LD BC,&4000
    LDIR
    POP BC
    CALL &B918 ;RESTORE UPPER Rom
    EI
    RET
```

Listing I

A spare time job

Since machine code can be incorporated efficiently into the Amstrad's interrupt structure, it only requires a small amount of code to enable a rom routine of your choice to be executed as an interrupt. Then the program can be interrupted, a sideways rom routine run, and the original program restarted.

There is one sideways rom routine which is ideal for the interrupt application: The graphics screen dump. Before seeing how to get at such a dump (for example, there's one in the SuperPower's Toolbox rom and another in Arnor's Utopia rom), we must first see how to take a look into these sideways roms.

Basic's PEEK doesn't work, since PEEK only ever looks at ram between 0000 and &FFFF. The solution is to move the contents of the rom into main memory. The starting address of all upper roms (the sideways roms, Basic and CP/M) is &C000 and they are all 16k or &4000 bytes in size.

Moving the entire 16k to location &4000 takes but a moment in machine code – this job is performed by Listing I. As soon as the rom has been relocated at &4000 it can be examined.

Listing II contains the code of Listing I and will first move the rom of your choice to &4000, then go on to find and print the rom version number, the commands and command addresses. Don't try it with rom 0 though – there are no | commands listed for the Basic Rom.

If you have no |HELP on your computer, you will need to physically examine your rom box or the relevant manual to ascertain which rom occupies which position. On the 464 the legal positions are 1-6 and on the 6128 they are 1-6 and 8-15.

The Basic program will prompt you to tell it which rom you wish to investigate and it will ask you whether you

want screen or hard-copy output of the command list.

Back to the dump

Returning now to those specific screen dump commands, Listing II reports that Utopia has the |GDUMP command at &F67E and Toolbox has |DUMP at &C888. Note that any other addresses reported will be valid – the difference simply means that the rom has been rearranged since I bought my versions.

Now (and carefully coached by the firmware spec) we can carry out the equivalent of Basic's |GDUMP in machine code. Assuming you have the relevant rom in position number 2 the code is:

```
LD C,2:LD HL,&F67E:JP &001B
```

Go to the bottom of the class if you thought it should have been CALL &F67E. Once again, the operating system needs to be told the rom and the address of the routine you're interested in, hence load C and load HL.

Getting to the code

However, the three instructions act just like CALL GDUMP. CALL &F67E on the other hand rushes off to screen ram and promptly crashes the Amstrad. Load register C with a different number for a different rom and load register HL with a different address for a different routine.

Note that on returning from the call, all registers and flags are as set by the target routine and register IY points to the rom's data area. You must save all registers which you wish to preserve before calling the rom routine.

The machine code needed to put the GDUMP routine (or any other sideways rom routine) into an interrupt handler comes in four short modules, as in Listing III. They are placed at address &9200 and sit there seemingly doing nothing much at all. The code is consulted 50 times a second and is keeping an eye on key f0 to see if it is pressed.

Rom turn on

Module one ISR_ON contains the code which tells the Amstrad to add a new routine to its list of events which it is currently servicing at the 2 millisecond interrupt rate. The new routine is called ISR and is officially logged into the system by calling ISR_ON, (CALL &9220).

Module ISR_OFF removes ISR from the system, so CALL ISR_OFF, (CALL &922E) restores normality. *(As soon as we are sure what is normal anyway – Ed).*

```
100 'LISTING 2
110 'THIS PROGRAM PRINTS COMMANDS AND
 ADDRESSES FROM A SIDEWAYS ROM
120 MEMORY &3FFF:RESTORE 160:DIM L$(8
0):L=0
130 MODE 1:PRINT "TYPE 0 FOR SCREEN D
ISPLAY OR"
140 PRINT "   8 FOR HARD COPY":INPUT
N
150 FOR A=&8000 TO &8017:READ A$:POKE
 A,VAL("&"+A$):NEXT
160 DATA F3,0E,02,CD,0F,B9,C5,11,00,4
0,21,00,C0
170 DATA 01,00,40,ED,B0,C1,CD,18,B9,F
B,C9,00,00
180 CLS:INPUT "ADDRESS OF Rom 2,CD,0F
,B9,C5,11,00,40,21,00,C0
170 DATA 01,00,40,ED,B0,C1,CD,18,B9,F
B,C9,00,00
180 CLS:INPUT "ADDRESS OF Rom 2,CD,0F
,B9,C5,11,00,40,21,00,C0
170 DATA 01,00,40,ED,B0,C1,CD,18,B9,F
B,C9,00,00
180 CLS:INPUT "ADDRESS OF Rom 1-7";A:
POKE &8002,A
190 CLS:PRINT #n,"Rom";A;"Version ";:
CALL &8000:A=&3FFF:C=0
200 PRINT #n,CHR$((PEEK(&4001)+48));"
.";CHR$((PEEK(&4002)+48));
210 PRINT #n,CHR$((PEEK(&4003)+48)):P
RINT #n:A=&4006
220 C=C+1:r$=HEX$(PEEK(A+2),2):s$=HEX
$(PEEK(A+1),2):L$(L)=r$+s$:L=L+1:A=A
+3
230 IF PEEK(A)=&C3 THEN GOTO 220
240 L=0:FOR B=1 TO C:PRINT #n,L$(L);"
 ";:L=L+1
250 V=PEEK(A):IF V>&7F THEN V=V-&80:P
RINT #n,CHR$(V);:A=A+1:GOTO 280
260 PRINT #n,CHR$(V);:A=A+1:GOTO 250


270 NEXT:STOP
280 IF V<32 THEN PRINT #n,"general co
de follows....":STOP
290 PRINT #n:GOTO 270
```

Listing II

The ISR module is the Interrupt Service Routine. It scans the keyboard and considers whether function key f0 has been pressed. All the Z80 registers are saved – this is essential as the computer would crash if it were not done.

After all the PUSHs, a CALL to the firmware routine &BB1E establishes whether the key f0 (code 15) has been pressed.

If it hasn't an immediate exit from the interrupt routine is made via label KFIN and the ISR routine has done its job in no time at all. If, on the other hand, the correct function key is pressed, a jump is made to TEST_ROUTINE. This is a routine in Amstrad's lower rom which doesn't do anything too drastic (it clears the screen) and it is useful for test purposes. TEST_ROUTINE is a simple

```
;LISTING 3

;ISR HAS 4 MODULES, 1) ISR
;          2) ISR_ON
;          3) IS_ROFF
;          4) Rom_ROUTINE

    ORG &9200

ISR   DI
    PUSH AF
    PUSH HL
    PUSH DE
    PUSH BC
    PUSH IX
    PUSH IY
    LD HL,KFIN
    PUSH HL
    LD A,15    ;F0 ON KEYPAD
    CALL &BB1E ;PRESSED ??
    JP NZ,TEST_ROUTINE
    ;or jp nz,rom_routine
    POP HL
KFIN  POP IY
    POP IX
    POP BC
    POP DE
    POP HL
    POP AF
    EI
    RET

ISR_ON LD HL,TICK_BLOCK
    LD B,&81
    LD C,0
    LD DE,ISR
    CALL &BCD7 ; KL_NEW_FRAME_FLY
    RET

ISR_OFF LD HL,TICK_BLOCK
    CALL &BCDD ; KL_DEL_FRAME_FLY
    RET

TICK_BLOCK  DS 9 ;SCRATCH RAM SPACE

Rom_ROUTINE LD C,2   ;WHICH Rom ?
       LD HL,&F67E ;WHICH ADDRESS ?
       JP &001B  ;KL_FAR_PCHL -- GO T
HERE !

TEST_ROUTINE JP &BC14  ;SCR_CLEAR  --
 GO THERE !

       END
```

Listing III

JUMP but because the Z80 stack has been fiddled (see the assembler instruction `LD HL,KFIN:PUSH HL`) the jump acts as a CALL which returns to the KFIN label.

Any jump can be placed at label TEST_ROUTINE, including jumps to your own machine code subroutines. However, as it stands, Listing IV loads the screen-clearing routine, so every time you press f0, regardless of what the computer happens to be doing at the time, the screen should immediately clear.

Choosing your code

If this works, you have entered the code correctly and can start experimenting. Turn the ISR off with CALL &922E (or GOTO 250 if Listing IV is still in memory) and set about altering line 160, and possibly lines 200 and 220. The data on line 160 becomes 3E. This substitutes the Rom_ROUTINE for the TEST_ROUTINE.

If the rom number you are going to use isn't 2, alter the data on line 200. Next alter the data on line 220 to the address of the rom routine. Note the address is printed with the low byte first, so leave it as 7E,F6 for Utopia's GDUMP but change it to 88,C8 for Toolbox's DUMP command.

Run Listing IV and the altered code will be entered into memory: The ISR will be logged on, and henceforth whenever you press key f0 you should get a screen dump on your printer regardless of what the computer is doing. If the screen happens to be constantly changing, you get a snapshot of the screen as it appeared the instant f0 was pressed.

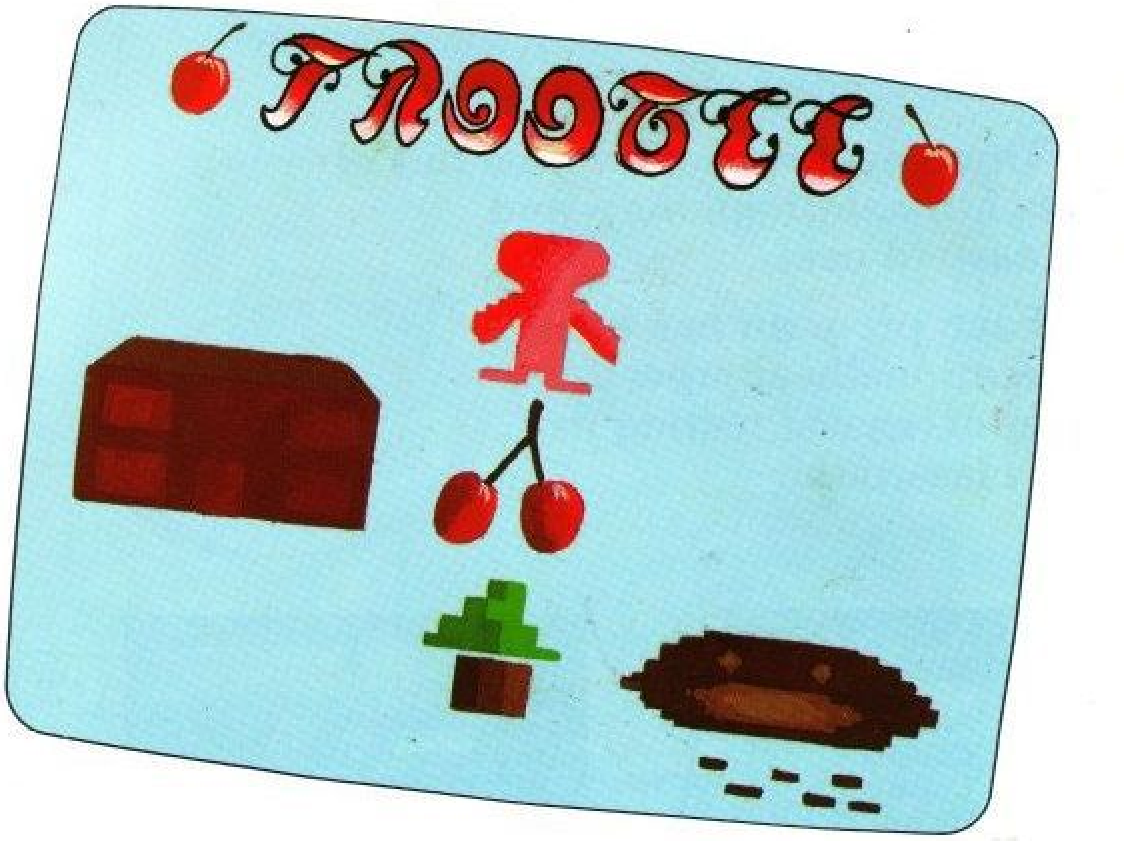
There are some limitations to this. Most commercial software will be upset by your interrupt routine, so don't expect to be able to dump a screen from a top 20 game. And some rom routines cannot be called from inside an interrupt, notably disc commands which use an interrupt themselves. Have fun.

ACU

```
100 'LISTING 4
110 'THIS PROGRAM CREATES THE ISR M/C
 AT&9200
120 MEMORY &91FF:RESTORE 150
130 FOR A=&9200 TO &9248
140 READ A$:POKE A,VAL("&"+A$):NEXT

150 DATA F3,F5,E5,D5,C5,DD,E5,FD,E5,2
1,16,92,E5,3E,0F,CD,1E,BB,C2
160 DATA 46
170 DATA 92,E1,FD,E1,DD,E1,C1,D1,E1,F
1,FB,C9
180 DATA 21,35,92,06,81,0E,00,11,00,9
2,CD,D7,BC,C9
190 DATA 21,35,92,CD,DD,BC,C9,00,00,0
0,00,00,00,00,00,00,0E
200 DATA 02
210 DATA 21
220 DATA 7E,F6
230 DATA C3,1B,00,C3,14,BC
240 CALL &9220:STOP:REM ISR_ON
250 CALL &922E:STOP:REM ISR_OFF
```

Listing IV



FRED the fruit picker has sprayed his crop with the wrong pesticide. Help him collect his cherries, through 30 different fields, and save his job. But beware. One of the cherries has mutated and is determined to allow the other cherries to mutate, by killing you.

To pick up a cherry move over it. When you have all the cherries from the field go into the house. You will then be transported to the next field.

Frootee works with both the keyboard and a joystick, you need to wait for the music to start before playing the game. The cherry monster is very aggressive, it is best to run off the top of the screen and try to get him trapped in the trees.

When typing in the listing be careful with the DATA statements. Remember to save the program before running it. The ¦ character is a shifted @, next to the letter P on the keyboard. This should prefix the word SPRITE since it is an RSX.

Good luck – the men at nine elms are depending on you.

A CPC game in Basic and machine code by Brian Round

```
1 ENT -1,1,2,1
2 DIM t(64):DIM m$(10,10):DIM ch(30):RES
  TORE 2:FOR f=1 TO 30:READ ch(f):NEXT f
  :DATA 1,2,1,2,3,2,6,3,1,8,3,14,5,2,5,2
  ,3,1,2,20,3,3,5,1,7,4,3,2,1,8
3 DIM be(1024):DIM tr(30):RESTORE 3:FOR
  f=1 TO 20:READ tr(f):NEXT f:DATA 10,9,
  8,20,3,6,14,7,3,5,9,1,6,6,6,9,15,13,5,
  1,1,1,2,2,2,2,2,10,4
4 GOSUB 9000:CALL &A000
5 RESTORE 8:FOR f=0 TO 15:READ a:INK f,a
  :NEXT f
6 GOSUB 2000
7 sc=0:le=1:li=3:GOSUB 800
8 DATA 1,24,20,6,9,12,18,3,6,13,26,16,11
  ,0,23,15
10 MODE 0:CLS:WINDOW#1,1,20,21,23:PEN#1,
   0:PAPER#1,1:CLS#1
20 FOR f=0 TO 19 STEP 2:¦SPRITE,0,f,&A07
   6:¦SPRITE,36,f,&A076:NEXT f
22 FOR f=0 TO 10:FOR q=0 TO 10:m$(f,q)="
   ":NEXT q:NEXT f
25 FOR f=0 TO 10:m$(f,0)=".":m$(f,9)="."
   :NEXT f
35 ti=100
40 LOCATE#1,7,3:PRINT#1,"SCORE";sc:LOCAT
   E#1,2,1:PRINT#1,"TIME";ti;" ":LOCATE#
   1,12,1:PRINT#1,"LIVES";li
45 x=1:y=0:m1=8:m2=8
46 GOSUB 1000
47 m$(5,5)=""
50 ¦SPRITE,20,10,&A27E
55 ¦SPRITE,x*4,y*2,&A17A:¦SPRITE,m1*4,m2
   *2,&A1FC
56 IF m$(y,x)="f" THEN SOUND 1,478,6,7,0
   ,1,4:frc=frc-1:sc=sc+50:GOSUB 950:m$(
   y,x)=""
57 a=x:b=y:m3=m1:m4=m2
58 IF x=m1 AND y=m2 THEN CLS:¦SPRITE,x*4
   ,y*2,&A300:GOSUB 750:li=li-1:IF li=0
   THEN GOTO 2500 ELSE GOTO 10
59 IF ti>0 THEN ti=ti-1
```

```
61 IF frc=0 THEN IF x=5 AND y=5 THEN GOT
   O 850
62 IF INKEY(lef)=0 THEN IF x>1 THEN IF m
   $(y,x-1)<>"." THEN x=x-1
64 LOCATE#1,2,1:PRINT#1,"TIME";ti;" "
65 IF INKEY(ri)=0 THEN IF x<8 THEN IF m$
   (y,x+1)<>"." THEN x=x+1
70 IF INKEY(up)=0 THEN GOSUB 100
75 IF INKEY(do)=0 THEN GOSUB 150
77 GOSUB 200
80 ¦SPRITE,a*4,b*2,&A382:¦SPRITE,m3*4,m4
   *2,&A382
85 GOTO 50
99 CLS:FOR f=1 TO 10:FOR q=1 TO 8:LOCATE
   q,f:PRINT m$(f,q):NEXT q:NEXT f:STOP
100 IF y=0 THEN y=9:RETURN
105 IF m$(y-1,x)<>"." THEN y=y-1
110 RETURN
150 IF y=9 THEN y=0:RETURN
155 IF m$(y+1,x)<>"." THEN y=y+1
160 RETURN
```

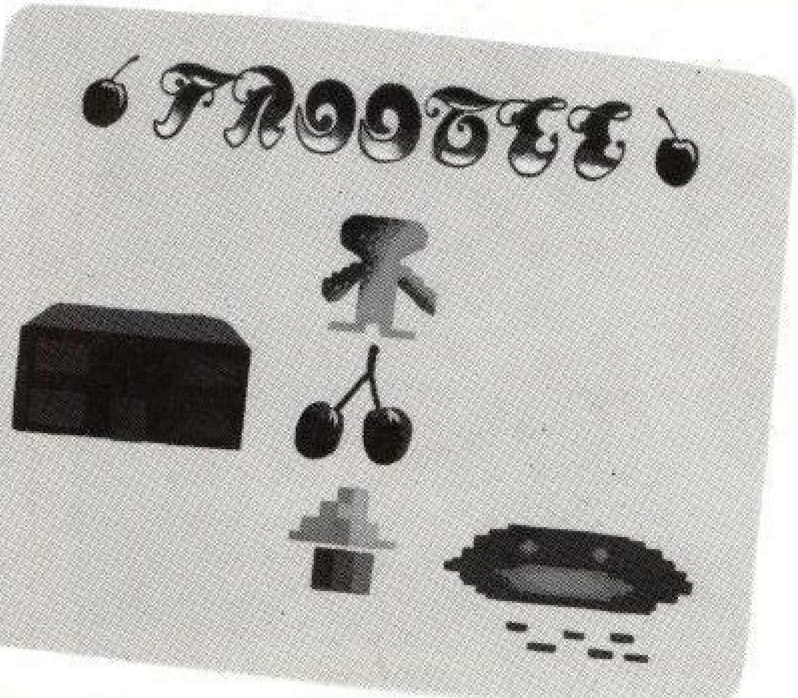
```
200 IF m$(m2+1,m1)="" THEN m2=m2-(y>m2)
210 IF m$(m2-(1 AND m2>0),m1)="" THEN m2
    =m2+(y<m2)
220 IF m$(m2,m1+1)="" THEN m1=m1-(x>m1)
230 IF m$(m2,m1-1)="" THEN m1=m1+(x<m1)
240 RETURN
500 ENV 1,2,0,1,1,-6,1,17,0,1:ENV 2,15,-
    1,2:ENV 3,7,-2,1,3,0,1
510 RESTORE 511:FOR f=1 TO 64:READ t(f):
    NEXT f:
511 DATA 956,716,956,758,716,478,716,478
    ,956,716,956,758,716,478,716,478
512 DATA 956,716,956,758,716,358,716,358
    ,956,716,956,758,716,358,716,358
513 DATA 956,716,956,758,716,506,716,506
    ,956,716,956,758,716,426,716,426
514 DATA 956,716,956,758,716,478,716,478
    ,956,716,956,758,716,478,716,478
520 FOR f=129 TO 1024 STEP 8:be(f)=15:NE
    XT f:FOR f=257 TO 1024 STEP 4:be(f)=
```

```
    15:NEXT f:FOR f=257 TO 1024 STEP 32:
    FOR q=14 TO 0 STEP -1:be((14-q)+f)=q
    :NEXT q:NEXT f:FOR f=513 TO 1024 STE
    P 64:FOR q=14 TO 0 STEP -1:be(f+q)=q
    :NEXT q:NEXT f
521 FOR f=641 TO 1024:be(f)=0:NEXT f:FOR
     f=673 TO 1024 STEP 32:be(f)=15:NEXT
     f
522 FOR f=705 TO 1024 STEP 32:be(f)=3:be
    (f+16)=15:NEXT f:FOR f=769 TO 1024 S
    TEP 32:FOR q=0 TO 7 :be(f+q)=15-(q+1
    ):NEXT q:NEXT f:FOR f=897 TO 1024:be
    (f)=0:NEXT f
523 FOR f=897 TO 1024 STEP 8:FOR q=0 TO
    7 STEP 2:be(f+q)=8+q:NEXT q:NEXT f
525 p1=1:p2=1:ton=1:cou=1:kp=0
526 FOR f=1 TO 32:SOUND 1,0,20,6,1,0,1:F
    OR q=1 TO 165:NEXT q:NEXT f

530 GOSUB 600
532 SOUND 1,0,20,6,1,0,1
540 SOUND 2,t(p1)/ton,20,15,2
550 SOUND 4,0,10,15,3,0,be(p2):SOUND 4,0
    ,10,15,3,0,be(p2+1)
560 p1=p1+1:IF p1=65 THEN p1=1
565 p2=p2+2:IF p2=1025 THEN GOTO 575
566 cou=cou+2:IF cou=257 THEN ton=2
567 IF cou=513 THEN ton=4
568 IF cou=769 THEN ton=8
569 IF kp=1 THEN RETURN
570 GOTO 530
575 FOR f=1 TO 32:SOUND 1,0,20,6,1,0,INT
    (RND*15)+1:FOR q=1 TO 165:NEXT q:NEX
    T f
580 FOR f=1 TO 10000:NEXT f:GOTO 500
600 IF INKEY(37)=0 THEN lef=71:ri=63:up=
    27:do=36:kp=1:GOSUB 630:RETURN
610 IF INKEY(45)=0 THEN lef=74:ri=75:up=
    72:do=73:kp=1:RETURN
620 RETURN
630 WINDOW#1,4,16,8,13:PEN#1,6:PAPER#1,1
    2:CLS#1:LOCATE#1,4,2:PRINT#1,"Z-Left
    ":LOCATE#1,4,3:PRINT#1,"X-Right":LOC
    ATE#1,4,4:PRINT#1,"P-Up":LOCATE#1,4,
```

```
     5:PRINT#1,"L-Down":FOR f=1 TO 5000:N
     EXT f:RETURN
 750 ENT -3,2,-1,2,2,1,2:RESTORE 770:FOR
     f=1 TO 11:READ no,nno,du:SOUND 1,no,
n":FOR f=1 TO 5000:N
     EXT f:RETURN
 750 ENT -3,2,-1,2,2,1,2:RESTORE 770:FOR
     f=1 TO 11:READ no,nno,du:SOUND 1,no,
n":FOR f=1 TO 5000:N
     EXT f:RETURN
 750 ENT -3,2,-1,2,2,1,2:RESTORE 770:FOR
     f=1 TO 11:READ no,nno,du:SOUND 1,no,
     du*10,7,0,3:SOUND 2,nno,du*10,7,0,3:
     FOR q=1 TO du*120:NEXT q:NEXT f
 760 RETURN
 770 DATA 253,169,3,253,169,2,253,169,1,2
     53,169,3,213,142,2,225,150,1,225,150
     ,2,253,169,1,253,169,2,179,284,1,253
     ,169,2
 780 MODE 0:CLS:TAG:FOR f=400 TO 250 STEP
      -4:SOUND 1,401-f,1,7:MOVE 400-f,f:P
     RINT"GAME OVER";:NEXT f:TAGOFF:FOR f
     =1 TO 2000:NEXT f:RETURN
 800 MODE 0:CLS:LOCATE 7,10:PRINT"LEVEL";
     le:FOR f=1 TO 2000:NEXT f:RETURN
 850 FOR f=ti TO 0 STEP -1:ti=f:SOUND 1,1
     ,1,7:sc=sc+1:GOSUB 950:NEXT f
 855 le=le+1:IF le>30 THEN GOTO 3000 ELSE
      GOSUB 800:GOTO 10
 900 FOR q=1 TO frc
 905 fr1=INT(RND*8)+1:fr2=INT(RND*7)+1:IF
      m$(fr2,fr1)<>"" THEN GOTO 905 ELSE
     IF fr1=5 AND fr2=5 THEN GOTO 905 ELS
     E m$(fr2,fr1)="f"
 907 SPRITE,fr1*4,fr2*2,&A0F8
 910 NEXT q:RETURN
 950 LOCATE#1,7,3:PRINT#1,"SCORE";sc:LOCA
     TE#1,2,1:PRINT#1,"TIME";ti;" ":RETUR
     N
1000 REM screen
1005 FOR f=1 TO tr(le)
1010 w1=INT(RND*8)+1:w2=INT(RND*8)+1:IF
     m$(w1,w2)="." THEN GOTO 1010 ELSE
     SPRITE,w2*4,w1*2,&A076:m$(w1,w2)=".
     "
1011 NEXT f
1020 frc=ch(le):GOSUB 900:RETURN
2000 MODE 0:CLS:FOR f=0 TO 23 STEP 2:FOR
      q=0 TO 36 STEP 4:SPRITE,q,f,&A0F8
     :NEXT q:NEXT f
```

```
2010 LOCATE 4,2:PRINT"F R O O T E E":LOC
     ATE 1,20:PRINT"(c)1987 Brian Round.
     ":LOCATE 4,8:PRINT" J - Joystick ":
     LOCATE 4,10:PRINT" K - Keyboard "
2025 GOTO 500
2500 GOSUB 780:GOTO 5
3000 MODE 0:CLS:FOR f=1 TO 500:LOCATE 3,
     10:PEN INT(RND*15)+1:PRINT"CONGRATU
     LATIONS":x=INT(RND*10):y=INT(RND*10
     ):SOUND 1,200+x+(y*40),2,15,3,0,INT
     (RND*15)+1:SPRITE,x*4,y*2,&A17A:NE
     XT f:PEN 1:GOTO 5
9000 DATA 01,0e,a0,21,0a,a0,cd,d1,bc,c9,
     0,0,0,0,13,a0,c3,1a,a0,53,50,52,49,
     54,c5,0,cd,19,bd,11,50,0,21,b0,bf,d
     d,46,02,04,19,10,fd,dd,7e,04,07,5f,
     16,0,19,dd,56,01,dd,5e,00,1a,47,13,
     1a,4f,13,c5,e5,e5,d5,11,75,a0,3e,00
     ,12,7e,cb,7f,20,05,f5,3e,aa,12,f1,c
     b
```



```
9010 DATA 77,20,04,1a,f6,55,12,eb,d1,1a,
     00,e1,00,77,23,13,10,db,e1,01,00,08
     ,09,30,04,01,50,c0,09,c1,0d,20,ca,c
     9,00
9020 RESTORE 9000:FOR f=0 TO 117:READ a$
     :POKE &A000+f,VAL("&"+a$):NEXT f
9024 RESTORE 9025:FOR f=0 TO 779:READ a:
     POKE &A076+f,a:NEXT f
9025 DATA 8,16,0,0,0,16,32,0,0,0,0,0,0,1
     6,32,0,0,0,0,0,0,48,48,0,0,0,0,0,0,
     112,56,0,0,0,0,0,16,112,56,32,0,0,0
     ,0,16,112,60,32,0,0,0,0,48,112,60,4
     8,0,0,0,0,48,240,180,56,0,0,0,16,48
     ,240,180,56,32,0,0,16,48,240,180,60
     ,32,0,0,48,48,48,48,48,48,0,0,0,0,2
     52
```

```
9026 DATA 169,0,0,0,0,0,0,252,169,0,0,0,
     0,0,0,252,169,0,0,0,0,0,0,252,169,0
     ,0,0,0,0,0,252,169,0,0,0
     ,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
9029 DATA 8,16,0,0,0,0,0,0,0,0,0,0,0,0,1
     ,16,48,0,0,0,0,0,16,48,32,0,0,0,0,1
     6,48,32,0,0,0,0,0,48,48,0,0,0,0,0,4
     8,32,16,32,0,0,0,16,48,0,0,48,0,0,0
     ,48,0,0,0,48,32,0,84,252,252,0,84,2
     52,252,0,252,86,252,168,252,86,252,
     168,169,252,252,168,169,252,252,168
```

```
9030 DATA 169,252,252,168,169,252,252,16
     8,252,252,252,168,252,252,252,168,2
     52,252,252,168,252,252,252,168,252,
     252,252,168,252,252,252,168,84,252,
     252,0,84,252,252,0
9031 DATA 8,16,0,0,0,0,0,0,0,0,0,0,0,15,
     15,0,0,0,0,0,5,207,207,10,0,0,0,0,5
     ,199,203,10,0,0,0,0,5,207,207,10,0,
     0,0,0,0,203,199,0,0,0,0,0,0,69,138,
     0,0,0,0,0,0,51,51,0,0,0,0,0,17,51,5
     1,34,0,0,0,0,51,17,34,51,0,0,0,0,10
     3,17,34,155,0,0,0,0,207,20,40,207,0
     ,0,0
9032 DATA 0,0,84,168,0,0,0,0,0,0,84,168,
     0,0,0,0,0,0,84,168,0,0,0,0,0,0,15,5
     ,10,0,0
9033 DATA 8,16,0,0,1,3,3,3,0,0,0,1,3,252
     ,252,169,3,0,0,3,15,252,252,15,169,
     2,1,86,91,252,252,167,252,2,1,252,2
     52,252,252,252,252,3,3,252,173,15,1
     5,94,252,169,86,252,91,243,243,167,
     252,169,3,173,243,243,243,243,94,3,
     1,86,15,243,243,15,169,2,0,3,252,15
     ,15
```

```
9034 DATA 252,3,0,0,0,0,0,0,0,0,0,0,0,48
     ,16,16,32,0,0,0,0,48,48,16,16,0,0,0
     ,0,32,48,32,56,0,0,0,20,0,52,32,16,
     0,0,0,0,20,0,20,20,0,0
9035 DATA 8,16,0,84,252,252,252,252,168,
     0,0,252,252,252,252,252,252,0,84,25
     2,252,252,252,252,252,168,252,252,2
     52,252,252,252,252,252,195,195,195,
     195,195,195,195,195,135,15,75,195,1
     95,135,15,75,135,195,75,195,195,135
     ,195,75,135,195,75,195,195,135,195,
     75
9036 DATA 135,15,75,195,195,135,15,75,19
     5,195,195,195,195,195,195,195,195,1
     95,195,195,195,195,195,195,135,15,7
     5,15,15,135,15,75,135,195,75,75,135
     ,135,195,75,135,195,75,75,135,135,1
     95,75,135,15,75,75,135,135,15,75,19
     5,195,195,75,135,195,195,195
9037 DATA 8,16,0,0,0,86,252,0,0,0,0,0,0,
     86,252,0,0,0,0,0,0,86,252,0,0,0,0,0
     ,252,252,252,252,168,0,0,1,252,252,
     252,252,168,0,0,1,252,252,252,252,1
     68,0,0,1,252,252,252,252,168,0,0,1,
     3,86,252,3,0,0,0,0,0,86,252,0,0,0,0
     ,0,0,86,252,0,0,0,0,0,0,86,252,0,0,
     0,0,0
```

```
9038 DATA 0,86,252,0,0,0,0,0,0,86,252,0,
     3,0,0,0,0,0,86,252,0,0,0,0,0,0,86,2
     52,0,0,0,0,0,0,86,252,0,0,0,0,0

9038 DATA 0,86,252,0,0,0,0,0,0,86,252,0,
     3,0,0,0,0,0,86,252,0,0,0,0,0,0,86,2
     52,0,0,0,0,0,0,86,252,0,0,0,0,0

9038 DATA 0,86,252,0,0,0,0,0,0,86,252,0,
     0,0,0,0,16,112,48,32,0,0,0,0,48,176
     ,48,176,0,0,0,0,176,48,176,112,0,09
 040 POKE &A382,8:POKE &A383,16:FOR f=0
     TO 127:POKE &A384+f,0:NEXT f
9050 RETURN

69,1,253,169,2,179,284,1,253
     ,169,2
 780 MODE 0:CLS:TAG:F
```

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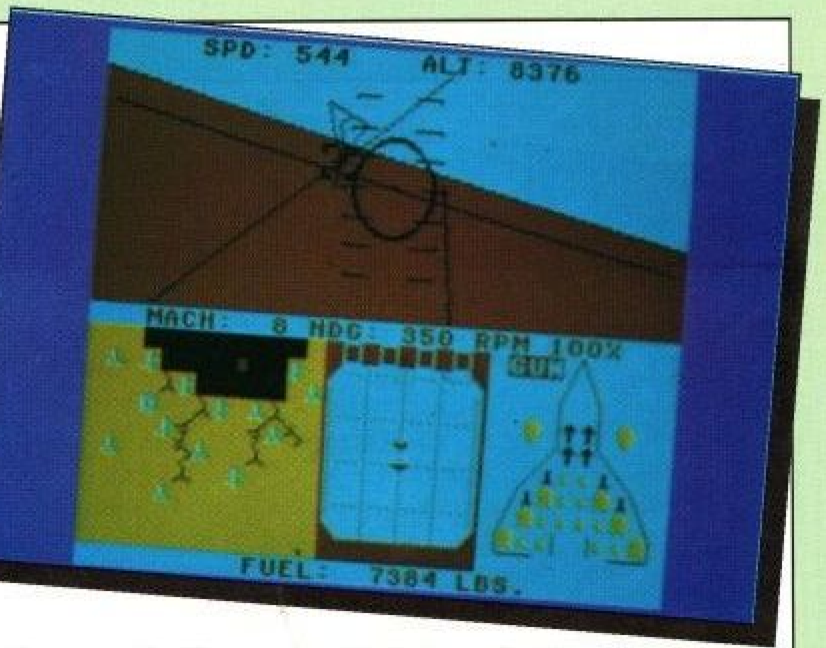
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F-15 STRIKE EAGLE



A 40-page manual indicates Microprose's usual degree of attention to detail. Strike Eagle is the latest US simulation to make it across to the Amstrad, and it manages to keep all the features the original boasted.

The idea is to fly a USAF F-15 strike aircraft on one of eight missions to destroy a primary target, surviving missile and airborne attacks along the way, and getting rid of any secondary targets that annoy you.

The standard flight simulator elements are strong. The screen shows the view from the fighter divided into land and sky in the traditional manner.

There's a lot to think about while you sit on top of your two Pratt and Whitney F100-PW-100 engines. This is reflected in the HUD – Head Up Display – which flashes important information on to your cockpit canopy, like speed and altitude. Other interesting events, such as being shot at or getting a SAM missile on your tail, are similarly notified.

Below the canopy are three displays. The right one shows how many bombs and bits you have strapped to your airframe. In the middle is the radar display, which conveys detailed data about any enemy airborne forces in your vicinity. These might include heat-seeking or radar guided missiles; you have jamming, chaff and flares to fool them but you have to decide fast which is going to work and be able to fly your way out of trouble if they don't.

This display area also incorporates indicators which show if you're being scanned by radar or heatseeker. To the left is the operations map; this shows a plan view of the area you're flying over and has all the enemy installations marked.

The instructions go into great detail about the capabilities of your fighter. Try flying at over 1680 knots and your wings fall off – just one of the delights for the rookie air jockey.

There's also a lot on the MiGs and missiles that will give you a warm reception as you bomb Libya, Egypt, Haiphong, Syria, Hanoi, Iraq or the Persian Gulf. The USAF certainly gets around.

It's quite amazing the number of ways you can carry out creative bombing. The Pop-Up is quite a lark: zoom along upside-down at 3000 feet, push the nose down and at 2000 feet roll, drop the eggs and climb out of danger. Remember the good old days when the Red Baron looked out of his cockpit, fished a grenade from an inside pocket and dropped it? Gone forever.

As well as bombs and guns, there are two flavours of air-to-air missile, short range (Sidewinders) and medium range (Sparrows). Another decision the nascent pilot must make when confronted with an enemy aircraft – dogfight or missile?

The radar has various ranges. At the longest it provides early indication of a threat, as you wind the range down it provides more detail of a close problem but you lose the long-distance warnings.

The basic flight controls are run from the joystick, and fire launches a missile, drops a bomb or lets off a few rounds of gunfire. The other 20-odd functions are controlled from the keyboard, and it's a good idea to learn them. Fast. There isn't time to look up the short-range missile button when two MiG-23s are taking an interest in your immediate future. This is a demanding simulation.

Author: MicroProse
Price: £9.95 tape, £14.95 disc

Nigel

Exciting as the life of a writer is, I've never actually flown a modern high-performance jet fighter. An odd omission from the old CV, but I feel a bit better now I've pushed F-15 Strike Eagle about a bit. At first I was a bit unhappy about the three frames/sec graphics, but as I took the time to learn the game they became less and less important.

A mission can take at least a quarter of an hour, and it should be possible to spend an hour or so up there. Action, adventure and a MiG up your wotsit. It might be politically unsound, but it's great fun.

18/20

Liz

OK, first thing to remember is that F-15 is not a game, it's a simulation. In the game stakes it's good but no cigar. A simulator requires some knowledge of the real thing, that's why you get a book full of numbers to read before you set the disc drive to load.

Microprose has strong links with the Pentagon through the company President Major "Wild Bill" Steely. He claims to playtest every game, and I know that MicroProse US does have a CPC. The quality is certainly good. More interesting than exciting.

19/20

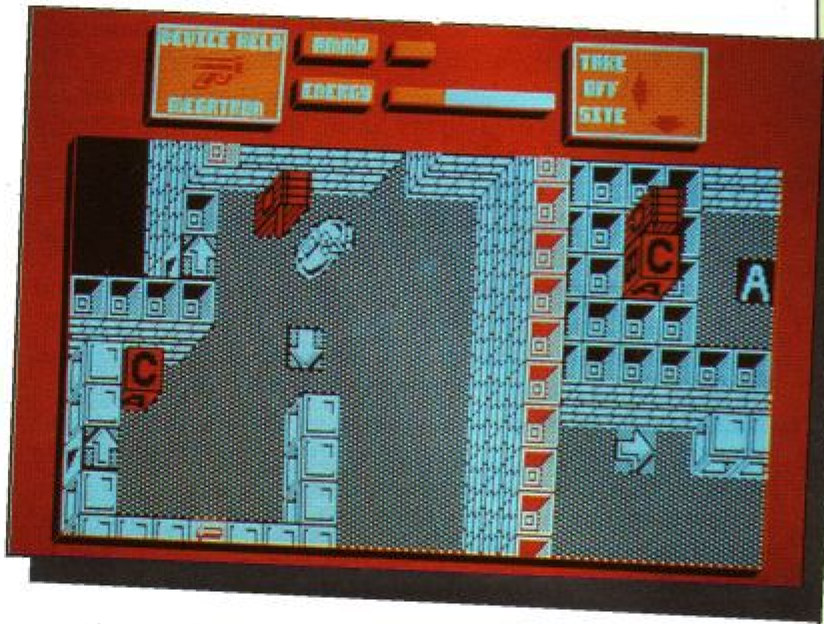
Colin

A good simulation gets you engrossed. This is a good simulation. You soon become oblivious to Mum calling for tea, forget that there are only six weeks left of the holidays and you've three books to read and essays to write.

There are bombs to be dropped on behalf of America. The only thing which is suspect is the package which makes it look like a Rainbird game. Friends who only had a quick blast didn't like F-15. It needs time.

17/20

THE FINAL MATRIX



REMEMBER the game with the Zircons? Now there's number two in the series that makes the Establishment blush; The Final Matrix. It stars Nimrod, a Biopton, who has been picked to rescue his buddies from the Cratons.

Fed up with floating in tasteless soup in tasteless yuppie restaurants, the Cratons have zapped down, snatched a few Bioptons and locked 'em away in matrices scattered through the galaxy. Nimrod's job: Scout and scour

First he picks his matrix from the five-sided TV set on your spaceship. Matrices are displayed as round blobs against a starry planet on the TV screen. This also tells you the matrix defensive strength. Then it's straight into a fairly standard 3-D maze chase, picking up weapons, finding stuff and dodging those things without your best interest at heart.

For the Nimrodian cause stand the TV system, which let the lone Biopton scan the matrix he finds himself in; blocks of concrete which he can put together to box in enemies or form steps, and various weapons which have slightly more effect than the tap-on- the-shoulder blaster he's been given.

Against are the standard issue wandering guards with energy-sapping missiles, disruptors that spin and push our hero off course, black ice areas that drain his batteries and 'wire framed antagonists'. Presumably some Gremlin miff at not having written Elite?

Nimmy skims about, finds his fellow baby Bioptron and whistles back to the launch site, from where he returns to the ship to pick another matrix. He must try to get the hostage from a particular matrix first time, otherwise the matrix defensive strength goes up the next time he returns.

The matrices have walls which Nimrod can sometimes jump on, if he can find a trampoline (tum te tum), or even better a thruster pad. But the walls don't have much in the way of tops, and it's easy to fall off into deepest nothingness. Not a good way to rescue your hostages.

Energy can be replenished from replenishment squares. We call them bars of chocolate, but the effect is similar apart from Nimrod's teeth not falling out afterwards. Of course, one cannot be sure that he's got teeth in the first place, or that alien physiology is close enough to ours for the old sugar-to-dentures cycle to work.

Back at the matrices without number, the time limit imposed by the Cratons is 99 Aeons, or just over 90 minutes if you convert at the rate of one Aeon = one minute. The usual rate of an Aeon being an infinite stretch of time does not apply. It only seems that way.

The titular final matrix refers to that felicitous event where Nimrod completes his quest, picks up the last hostage and returns to the ship to a reward unspecified.

Author: Gremlin
Price: £8.95

Nigel

If you can imagine no greater thrill than wandering around a seemingly infinite collection of seemingly identical three-dee mazes, engaging in firefights with a large number of robot guards who can easily outgun and outrun you and bouncing off walls while your one and only life trickles out then get The Final Matrix. Otherwise don't. In other words, it's not very good. Oscar Wilde could have been talking about this game when he said 'How boring'.

10/20

Liz

Ahh ha! (says Piglet), I thought when I saw the title screen, shoot-em-ups in space live on. A very clever loading routine tells you what's what while you wait – 'tho you can't nip downstairs for a quick Mr Juicy while the datacorder struts its 1200 bauds.

When the game proper starts you realise that the good bit is over. I had little control over Nimrod, and soon failed to regret that – I gave up.

8/20

Colin

Gremlin is an odd company, it produces wonderful cutesy games like Jack the Nipper and Thing on a Spring, yet when it tries to be serious it's like watching a Star Trek rerun, amusing but hard to believe. Once you've cut through all the plot, perhaps because of it The Final Matrix seems tres ordinare.

11/20

SLAP FIGHT

I ask you. If somebody told you that they had a game called Slap Fight, what would you think it would be. A previously undiscovered martial art perhaps, Chi'k to Chi'k, where two sweaty opponents prance about, trying to land an open-palmed stinger on a portion of the other's anatomy.

Ten points for a face, 20 for a thigh and a massive 50 for a pranged buttock. Could be quite a, er, hit with the right sound effects.

Would you think of it as another Lightforce? Slap Fight? It is, you know. Small spacecraft shooting up waves of invaders as they tumble down the screen. As each wave is eliminated the backdrop changes and the next lot come on in a meaner mood with more guns. As the Taito copyright message is displayed prominently, the thing has to be some arcade conversion, but the original hasn't been sighted around here. Perhaps Slap Fight is a misprint like Donkey Kong. That game should have been Monkey Kong, but a letter got mixed up...

Despite the hoary gameplay, there is a hint of innovation. Some aliens, when shot, turn into stars. These act very much as Green Shield Stamps. In case you're a stripling who has never heard of such things, let me elucidate.

GS Stamps were (maybe still are) given away by shops with sales. Collect a couple of hundred, and you could get a set of glasses, a couple of thousand and you picked up a TV. There was a top limit of some ridiculous number where the lucky saver could get a luxury yacht. The slight drawback that some 27,000 tons of processed peas had to be bought first was never mentioned.

No sale is needed with Slap Fight. One star entitles the owner to extra speed. Two adds a little something to the built in guns. Three causes deadly emissions to be radiated from the sides of the craft, and then come things like an industrial-strength laser, smart missiles and shields. Once you've spent your stars on a feature, you have to start again from scratch.

You get the desired extra by acquiring stars to the right number and pressing space. The new addition lasts for a variable time, but typically it works until you lose a life.



Enough of the InterStellar Discount Saving Scheme. The mechanics of the game are standard, except that on keyboard with extra speed the spaceship zips around at a phenomenal speed. You can outrace bullets with impunity, which is useful.

All the projectiles lobbed at you are carefully aimed. Aliens that you pass are quite capable of firing backwards with an accuracy that verges on the unfair. To the veteran space warrior, used to seeing the opposition shooting willy-nilly at nothing at particular, the sight of five or six missiles converging on the spot where he's sitting is educational. It also provokes joystick bending reactions.

It's an interesting game. But Slap Fight? There is mystery here. Probably a story too. Let me get my investigative boots on...

Author: Imagine
Price: £8.95

Nigel

The space fight theme develops. A nice twist on a nice implementation makes the game worthwhile, even with as strange a moniker as this one. There were a few interesting abnormalities on the preproduction version I had. Unusually, you could drive over an alien and you both survived unscathed. And the playing area didn't scroll down as smoothly as some I've seen. It's only half the screen as well, so there is room for improvement. Keep at it, Imagine (1984). One day you'll produce a real winner.

17/20

Liz

I played this in an arcade on holiday and loved it but didn't notice the name, so I assumed that Slap Fight was an ice hockey game. Imagine my jubilation when I found that this was that game. The patterns are the same, the sideways firing weapons don't have quite enough poke. Always go for the speed up first, then laser, then wings – which doubles your laser power and finally a shield. If you get every star you should have a shield for blasting at the big ship shown in the picture. Ace.

18/20

Colin

A straightforward, scrolly shooty game, in the same vein as Mission Genocide. The scroll is not as good but then this has to imitate the arcade machine, so there are other considerations. Because this was not a huge arcade hit I doubt that many people will buy it because they want the same game. They'd miss a good blast.

17/20



SHADOW SKIMMER

Once more we traipse gently into deep space for another saga of lasers, shields and rapacious robots. A quick update on the story is in order for those who've missed the previous episodes...

The scene is the bow end of a Star Class spaceliner. A junior officer has gone out on his compulsory solo space flight in a little skimmer to check on the robot defence systems, and everything seems OK. Relieved at this uneventful trip (he's seen some video games where all manner of unspeakable things befall a spacer) he turns to re-enter the ship.

And... the hatch is stuck. The only other entrance is at the front of the ship, some three sections and a humongous number of robotic defence devices away. At this point, three choices confront the unlucky fellow.

1. Sit tight and radio for a maintenance team to fix the hatch.

2. Ask the ship's defence officers to shut down enough hardware to let him through, or

3. Go for it, shooting his way to the front and destroying the three main central defence systems. Certain death, this one.

Simple logic dictates that options one and two make pretty boring computer games. So three it is. Gritting his teeth (a pretty unpleasant habit, the bits of stone get stuck between your molars), he swivels the ship and prepares to confront the computers.

The exterior of the Star Class liner is littered with girders, walls, partitions and other bits. The skimmer can't clear these, so the way back is going to be mazy. Some obstructions can be cleared with the skimmer flipped over on the back, but this reduces its manoeuvreability. And long words beginning with M are just what you need when there are three nerve centres to knock out before breakfast.

The designers of the Star Class weaponry decided that if the stuff was going to be any good it had be invisible, invincible, and inventive. Fortunately, a skimmer is equipped to overcome these attributes, but only if sensibly handled.

As each new sector is explored, the robot weapons wake up and pour out to attack the intruder, – that's you. Your lasers are useful, so are your three shields. These can keep you safe for a while, but run down as all good shields must. You go with the third shield, which at least stops any petty worrying about oxygen, food or water.

Strangely, you can get into the ship in places. Or at least into the inner bits of the hull, and to dodge some of the defences this is exactly what you need to do. Hover over a hatchway and loose off a bolt or two of phase-coherent light, and you'll be admitted. Don't expect the defences to let up inside. You won't be disappointed.

The instructions are a touch less than explicit, and the precise nature of the things that surround you remain mysterious. The top-down Mode 0 view doesn't give away too much, but it can be revealed that the inner tubes, tomatoes and rotating planks are in fact robots, and the bursts of laser fire are bursts of laser fire. So now you know. Off you go then.

Author: The Edge
Price: £8.95 tape £14.95 disc

Nigel

I didn't enjoy this game much. It's basically a maze game, with a little shooting and a lot of wandering about unremarkable areas. After five minutes of juddery chunky graphics I wondered whether anything different was going to happen. After 10 I stopped wondering.

I did gain a little fun by trying to guess which of the shapes was a hatchway, which was a low obstruction and which did nothing (the majority are in the last category). I also got a score in the high 30000s by sitting at the beginning and firing at a robot exit, which was about as exciting as it sounds.

15/20

Liz

There is nothing I like more than a good space-age zap. This is a mediocre one. Once you've worked out what to fly under, and which bits to avoid the game perks up a bit.

I'm surprised that a software house which is as well established as The Edge have not produced anything which is more remarkable.

10/20

Colin

Why should anyone want to skim a shadow? Having failed to get HAL to open the pod bay door you have to negotiate the most unstreamlined spaceship ever (not that spaceships need to be streamlined).

I found negotiating the maze bits frustrating due to the sluggish joystick control, and the sprites could have been slicker. The Edge could have made more of this.

12/20

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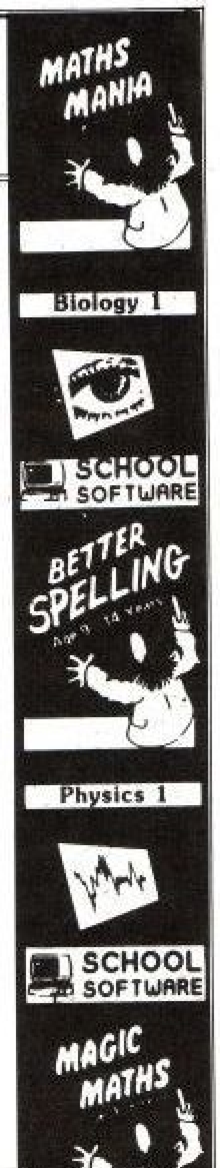
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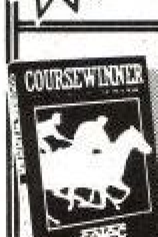
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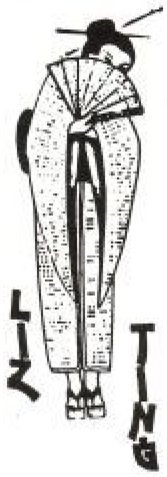
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Writing for Liz

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Program name:...

Programmer's name:...

Address: ....

....

Telephone number:...

Size:......................K

☐ Basic ☐ Machine code

☐ Other language........ (please specify)

If the program uses machine code is it:

☐ Assembler source ☐ Straight hex ☐ Checksummed hex

The program should work on: ☐ CPC 464 ☐ CPC 664 ☐ CPC 6128

It was written on: ☐ CPC 464 ☐ CPC 664 ☐ CPC 6128

The program loads in .... sections

I have sent it on: ☐ Tape ☐ Disc

A paper listing is not necessary.

Label the program clearly.

Documentation includes:

☐ Scenario (plot)

☐ A short note on how it works

☐ A subroutine by subroutine guide to how it works

☐ A list of variables used

☐ A guide to typing the program in and debugging

The documentation is on

☐ Paper ☐ Tape/disc....................................... (filename)

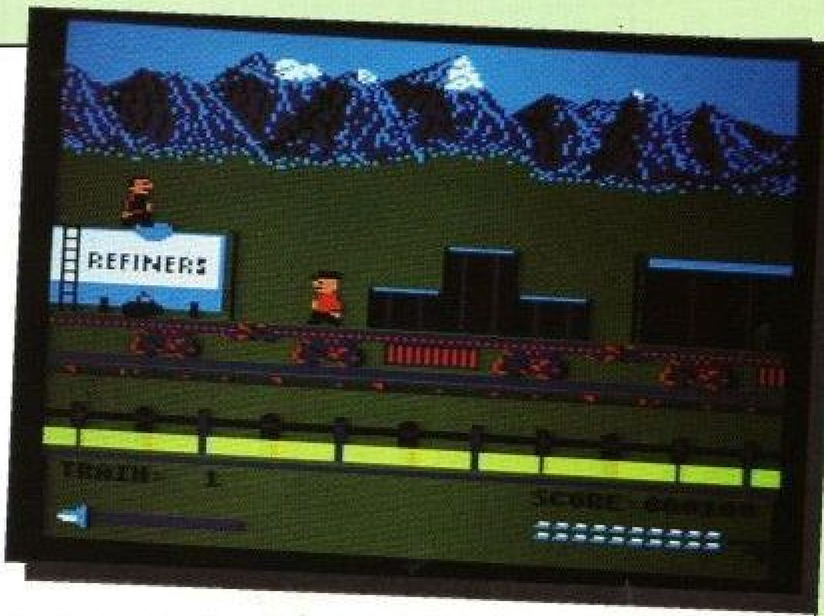
.... (word processor used)

The program is entirely my own work and if it is accepted I agreed to the sale of full world rights.

Signed ....

Date...

MOUNTIE MICK'S DEATHRIDE.



Hah! It sez here that this game is all about the McClusky gang, who have raided the Trans-Canadian Express and are running from Mountie Mick. They lob lead pellets, bombs, grenades and other instruments of badness at him while he chases them along the top of the train. Special mention is also made of loose moose (note the plural), chemical leaks and dark, dark tunnels. Balderdash.

We can reveal the true nature of the game for the first time. Mountie Mick is none other than 'Desperate' Mick Mountie, commuter and British Rail escapee. The McClusky gang is a team of highly-trained and lethally armed BR inspectors, with a licence to kill and a mission to rid the network of those who sit in first-class carriages with second-class (ooops, 'standard' these egalitarian days) tickets.

Mick started his day in a blind rage. He read in his newspaper that because Inter City trains were too crowded, BR were going to cut the numbers (entirely true). He had recently travelled steerage on a Plymouth-Paddington train, and the combination of that unfortunate experience and this information drove him over the edge.

He marched to the station. Pausing to strangle a guard, he leaped on to the first class coach, ignoring the sweaty masses hanging out of the doors in the other areas and sat down.

As the journey got under way, he calmed down a touch. There was a chance that the BR employees at the far end would have survived unscathed, except that the gang was on board. The gangsters burst through the far door of the first class compartment. "Tickets please, ladies and gentlemen" they called as they swept down the aisle. Nobody could escape.

They got to Mick, who, after a seconds hesitation, pulled out his season ticket. The inspector looked at the ticket. He looked at Mick. A hush (apart from the squealing of the wheels) fell on the carriage. "I'm sorry Sir", said the clippy. "This doesn't seem to be in order. Assume the position, dirt-ball". At this, he pulled out a Jimmy's Special, the Saville .45 Magnum, and aimed at Mike. The other inspectors gathered around, eagerly.

"No" said Mick. "Not this time. Not after Inter City." With a wild yell he knocked the gun away, picked it up from the seat where it had landed, pulled a window down and squirmed on to the roof. A whistle sounded, and all down the swaying train inspectors swarmed up on to the top. Mick started to run down the chain of carriages.

An inspector stopped and took aim. Too late – Mick had brought him down with the deadly accuracy brought on by madness.

Towards the end of the train, the guard had supplied the inspectors with anti commuter grenades, standard equipment since the infamous Revolt of the Seven-Hour Delay Due to Leaves on the Line at Clapham. These exploded around Mick, but he weaved and swerved, shooting to kill and hitting every time.

He was at the end of the train. The emergency escape device – a small cart – lay before him. He jumped on, loosened the bolts and set off down the track. The 8:15 pulled away with its load of carnage. The 8:34 lay ahead, and the wind blew the froth from Mick's mouth as he continued his insane mission.

Author: Ariolasoft
Price: £4.99

Nigel

Another chase the baddies down the top of the train job. I've always found this kind of game a bit of a lottery, and skill doesn't seem to enter into it.

This one is no different, no worse and no better than any other of its ilk. Ariolasoft call it hilarious. I don't.

12/20

Liz

Mountie Mick starts well, good title screen, colour rotation on the interrupts and multi-level scroll. The sprites are a bit small. Running down the train is very James Bondish, I don't understand where Mounties come into it, although I sympathise with anyone who has the motto "We always get our man".

The bit I did not like was the hand cart, waggling a joystick to make a sprite move is not my idea of fun. Longer trains and fewer of them would make a better game.

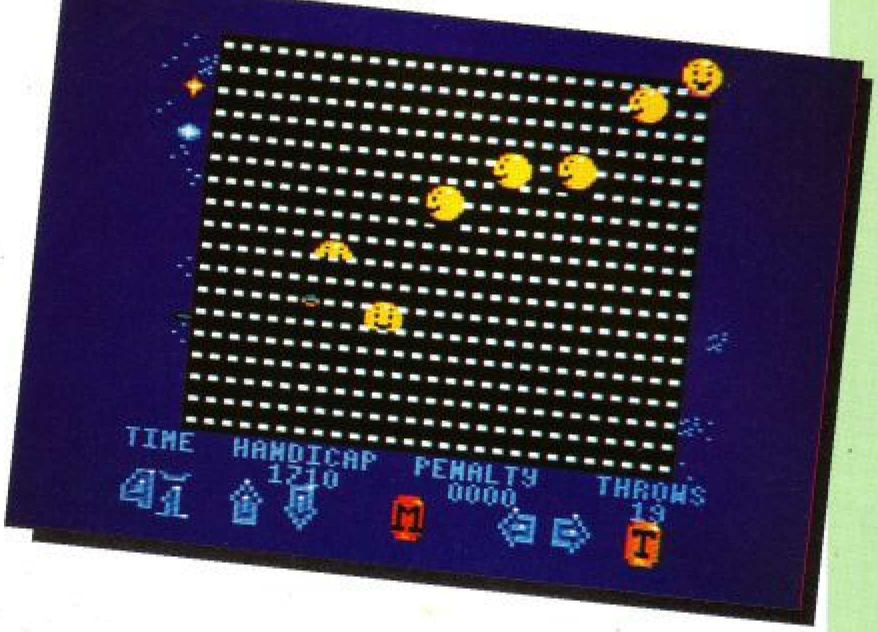
17/20

Colin

It is interesting how software houses which only do full price games think that £4.99 is cheap. Mountie Mick's Deathride is an experiment, to see how well cheap software sells. I think Ariolasoft will be surprised, it's a reasonable game and should persuade the games hungry amongst us to part with pennies. I found it difficult to run and jump at the same time but it has one of my ingredients – you can learn a route. Ariola are right, it would be a dead loss at £9.95 but mid-price its OK.

16/20

SPACED OUT



THE home micro and the board game have had quite an interesting relationship. Far from giving Monopoly the boot, computers have achieved a sort of symbiotic relationship with the dice throwing fraternity.

Most successful board games spawn micro versions, but there haven't been many that miss the card and counter stage altogether to hit the small screen first.

Spaced Out is undeniably a computer board game. Like all good (and not a few bad) games, the rules are simple. There's a grid of points on which players move. The idea is to move your player (a cosmic cowboy in ten-parsec hat and stellar leather boots) from the bottom left of the grid to the top right.

Movement is either along or up – no diagonals allowed – and the distance moved is cast by a couple of numbers which try ever so hard to be a pair of dice. No spots, but they do randomly set up two numbers between zero and six. Throwing a double means you move twice.

There has to be competition, in this case the Nasties. These swarm over the playing area and try to get in your way. You can't jump over them, but you can move on top of one to space it out. Hence the name of the game. You, too, can experience the unique delights of getting well wasted if the Nasties manage to prevent you making any legal move with the numbers the dice give you.

On the numerical side of things, there are several factors that determine the success of the boardtrotter. Each move has to be completed within a minute, and time penalties start to clock up if you haven't finished within 15 seconds. Spacing out an opponent (which removes it from the board) also accrues 100 penalty points.

Spacing out yourself provides another 400, and another nasty makes an entrance to cheer you up. More penalties accumulate if you use more than the alloted 20 moves.

You start off with a handicap rating, and this sets the maximum number of penalty points you can take. To begin with this is usually in the high thousands, but should you succeed in your mission then the number of penalty points you scored becomes your handicap for the rematch. So you have to get as many penalties as possible in the first game (without going over the top and losing) to give yourself a better chance in the more difficult subsequent game.

Joystick or keyboard is required for the game, most people having at least one of the two. At the start, you can choose the size of board from about a twelfth to over three quarters of the screen, and also the number of nasties. Dice are rolled by pressing the fire button, and you pick your moves by moving a pointer over a die and a direction arrow.

There are a few unfathomables. Can you comprehend the rules governing the nasties' ramblings? Why is the icon that means you're spaced out marked with a T? Is the game more interesting than playing Ludo with Aunty Mabel on Boxing Day? Only you, Firebird and the two quid in your pocket can provide the answer.

Author: Firebird
Price: £1.99

Nigel

Like wow, man. Spaced Out is a heavy handle to lay on a computer game. Like mind your head. But the action has little to do with the traditional meaning of the phrase. The game is a respectable cheapie, demonstrating the traditional board game attributes of alternating boredom and fascination. There's also a measure of frustration as the Nasties skip seemingly at random across the board, sometimes blocking you in and sometimes leaving you strictly alone. A game to be bought and played once a month.

16/20

Liz

Mix space with a rootin' tootin' cowsprite and a host of unfriendly helicopters and pac-thingies. The last thing you'd expect is a board game. The instructions are next to useless and the play is diabolically slow but it's fine when you get into it. Still I predict a flop. Spaced Out is not exciting and during the summer most people would rather be outside.

16/20

Colin

Like the man said this is a board game on a computer. Now, I usually dislike such things. Half the fun is moving toy racing cars out of jail free. Spaced Out is different. It's got a computer moderated opponent for a start and is fun to play. The game reminds me of Think! – also available on Firebird Silver, that requires greater cerebal effort and the sprites aren't as cute. Good game.

17/20

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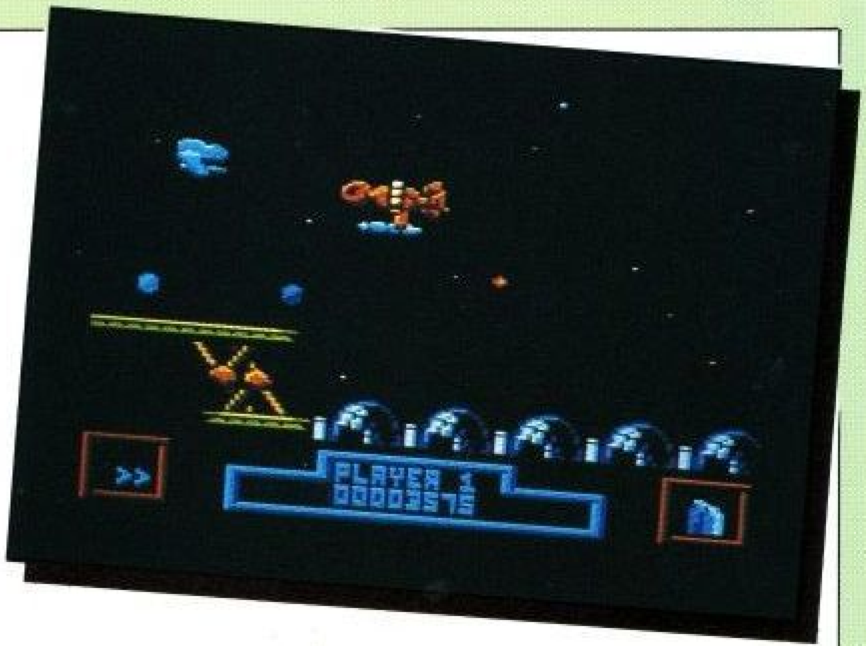
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ZYNAPS



GLANCING around the computer room shelves in Dunhackin, your reviewer's palatial hovel, I noticed that something was missing. While they strained, nay groaned, under the weight of various Breakouts, Space Invaders, Gauntlets and other arcade conversions, there was no Scramble. A sad omission for one who cut his lasers on the game.

In Scramble a rocket was guided down a labyrinthine cave system. There were, of course lots of defenders launching rockets, bombs and other hindrances to dissipate your molecules, but it was a fun game that ate more florins than it had any right to. And it is undoubtedly the ancestor of Zynaps.

Zynaps also has a rocket whizzing down a convoluted passageway, but this time it's in an alien space station. There's a degree or two of difference in the weapon systems as well - the original Scramble had just lasers and bombs. The Zynaps craft has pulse lasers, plasma bombs, homing missiles and seekers.

This array of armaments is controlled by the fuel scoop, which picks blobs of energy from the wrecks of alien defenders and feeds it to the weapon of your choice. The lasers and bombs are standard issue, but get more effective the more energy you feed them. The missiles are a bit odder.

Homers are guided by a crosshair on the screen, and once locked on to a target guarantee its annihilation. Seekers are a little bit smarter; they wander through the screen pulverising every alien construct that might conceivably turn nasty.

Armed with these little toys, all you have to do to pass the first stage is zap a few flying hazelnuts, Klingons and assorted aliens to hang around at the end until the ship's doors open. It's not easy, especially with the little red space mines and the FEN waiting for you (FEN = Fairly Enormous Nasty). But you will look back on those moments of fear with positive nostalgia when you get to the Asteroid Belt.

Floating rocks were a feature of Scramble, but they were never like this. Huge chunks of gently ambling geological obliteration, they wander in dense formation through the space you're trying to occupy simultaneously. Guess who wins.

Pass that stage, and it's time to go collecting. No, not stamps – hyperspace engines, alien planetbusters, little things like that. Beats chasing after a 1932 Mongolian Magenta 2 Blogga in lightly franked condition any sideral day of the week. It's a pity that the owners of the bits which your heart desires aren't too keen to part with them, but that's why Zarquan gave you pulse lasers.

And what do you do with this junkyard of xenomechanical marvels? You go into battle, of course. Which is where stamp freaks would be at a bit of a loss.

As the TEN (Truly Enormous Nasty) heaves into view you might reconsider that point of view. Very few philatelists end their days as a few specks of glowing gas, but you seem to be making a habit of it... Ah well, back to the Stanley Gibbons.

Author: Hewson
Price: £8.95 tape, £14.95 disc

Nigel

Hewson seems to be on the ascendant at the moment, even if it eschews the hype and hullabaloo of certain other labels. Zynaps seems set fair to continue this trend.

A nice evolution of a standard idea, it keeps the game simple and fast so that simpletons like me can concentrate on mashing things rather than controlling umpteen icons and deciphering messy screen layouts.

Against? The weapons control needed a lot of practice to get right, and the joystick seemed a bit sensitive, with the occasional burst of sluggishness. But this is another Hewson game that'll be making me miss deadlines a month from now. I'm keeping the tape.

18/20

Liz

Once I'd got the tape off the other two – they are holding my Konix as security – I found out what all the fuss and noise was about. The psychedelic colour rotation is just the start.

Zynaps is a bit like Nemesis, albeit easier. I failed to get to grips with the homer *(always thought that Iliad was a kind of cough sweet* – Ed) but liked the bouncy bomb.

There were times when I felt that the collision detection was unfair, but that didn't stop me playing till 3am. The best game this month.

18/20

Colin

Bit of a problem at first with this game. The idea of selecting weapons by scooping up the right number of lumps of fuel took a while to sink in, but by the time I'd mastered it I was sold.

For the first time in aeons I'm going to say it - this game is addictive with a capital H. The music at the beginning is worth listening to all the way through. Twice. Even though the high score name entry is a bit naff, I'm keeping the tape.

19/20

ACE OF ACES



The war is on. As a member of the RAF's Mosquito arm you are responsible for taking the fight to the enemy, and a wide variety of missions will have to be successfully completed before you can call yourself Ace of Aces.

The first stage is gaining complete familiarity with your aircraft. It is a fighter/bomber, like you capable of many roles in combat. Let's select the practice mission to start with.

We are flying over the Channel. From the cockpit the outside world can be seen (including the famous mid-Channel mountain range, hmmm . . .) and the usual altimeter and artificial horizon give you vital information.

The experimental radar in the corner spreads a green glow over the proceedings, its inquisitive finger scanning the empty skies ahead.

Switching to the engineer's view, we can see the port or starboard engines. You'll need to get here quickly if the fire extinguisher is needed or extra thrust is called for. This is also the place to activate the landing gear if, and it's a big if, you get back home again.

Crawl down to the bombadier's eyrie, where you'll see your remaining stocks of bombs, rockets and cannon shells.You can also switch out empty fuel tanks from here to improve trim and help economy.

Just behind the pilot's seat is the navigator's console. The map is updated with the latest intelligence reports and shows train, U-boat, bomber and V-1 movements. You can also spot impending storms – these you should try to avoid.

Now it's time for the real thing. Back in briefing you can choose which of the enemy forces to go for, V-1, U-boat and so on. You get a full intelligence report on strengths, weather conditions and likely air cover. You can also decide on the best mixture of weapons to carry – this can be vital. A last look at the map, and you're off.

In the air your compass directs you to the target. Anything requiring your attention is announced by the intercom blinking, and it is important to get to the area in trouble and fix the problem fast. So practice. If the bombadier calls it means that the target is in sight and it's time to lay those eggs.

When you are laden down with all those high explosives the plane is a bit sluggish. If you catch sight of the enemy you'll have to get them sharpish before they get you. If they do attack you might lose instruments, so you'll have to learn how to fly by the seat of your pants if you want to survive.

Once you have flown a mission the computer will allow you to repeat it immediately, or rewind the tape to select a new one. Disc owners, of course, will find changing missions less of a chore.

And so the night beckons. Once again the terror across the Channel is massing to attack the Allied cause.

It's time to strike back.

Author: US Gold
Price: £9.95

Nigel

Perhaps I'm getting old, but the relentless gung-ho of these war games is wearing a bit thin. This one is otherwise OK.

It's quite difficult, and your aircraft handles a bit sluggishly in dogfights, making things a bit hit-or-miss. But there's a lot in this well-produced game, and the novelty is unlikely to pall before you've got the much-vaunted epithet.

14/20

Liz

There are two types of flying program, the simple to fly zappy shot-em-up game and the difficult, accurate simulator. This follows the Dambusters trend by bridging that gap.

Flying the Mosquito is no doddle without worrying about the odd ME109 trying to riddle your airframe with holes.

The business of swapping missions on tape is a bit of a bore. Perhaps it is because there are so many skills to master I found this a satisfying game.

I started to panic as an engine caught fire . . . I felt chuffed as I downed a bandit. You will believe a program can fly.

18/20

Colin

Righty ho! All you budding Biggleses sign on here please. Thank you for volunteering to do your duty for king and country. You choose your mission, make sure your Mozzy is loaded with as much fuel and ammo as she can carry.

The graphics are quite distinct, although they could have been more colourful (I suppose it is night time) and I liked the way the various menus were presented.

As flight simulators go the flight bit is not so important, but there's the added pleasue of bumping off a few of the enemy. The opposing planes are a bit insistent, and it is too easy to wind up dead just when you thought you were winning. Ah well . . .

16/20

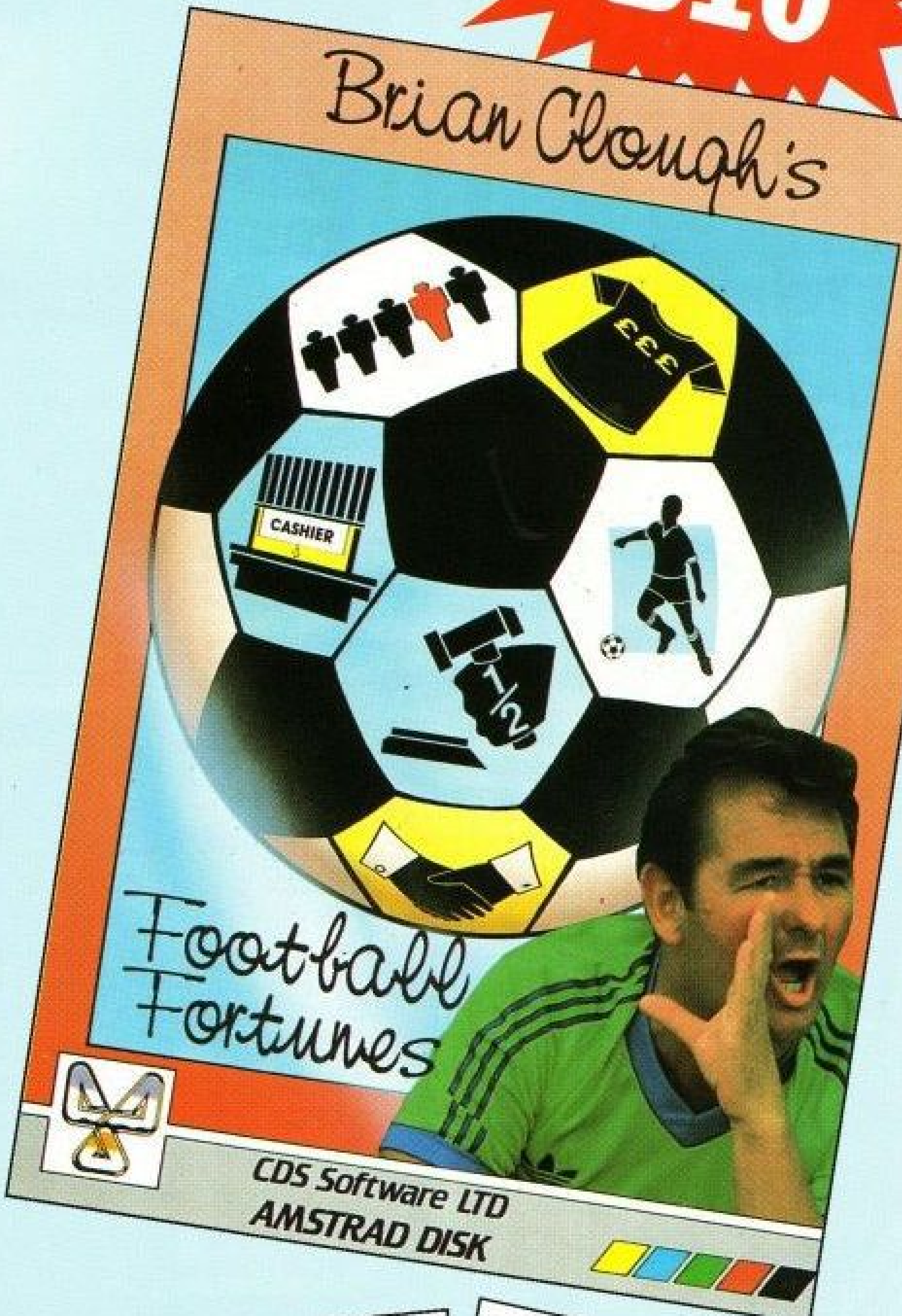
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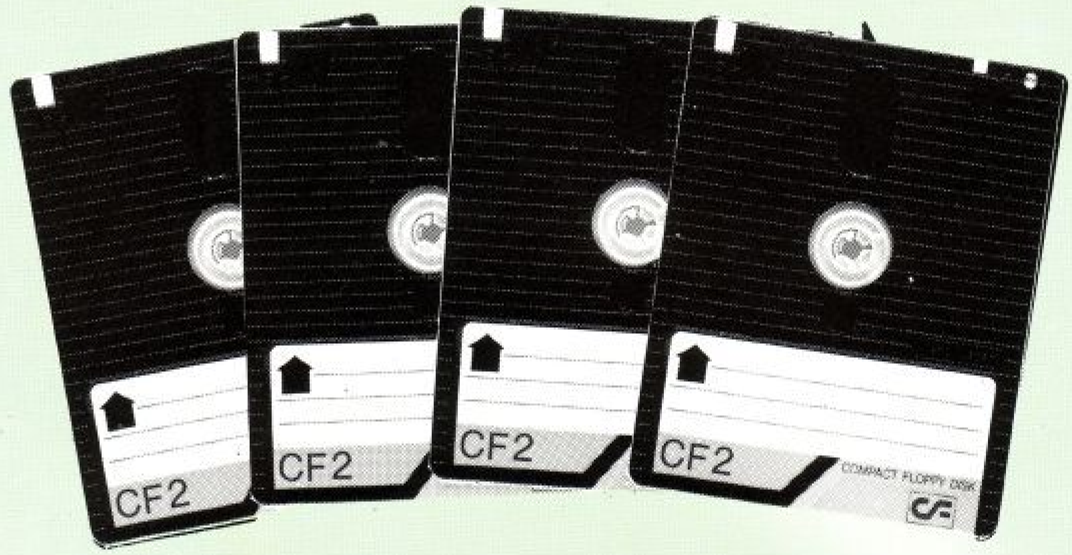
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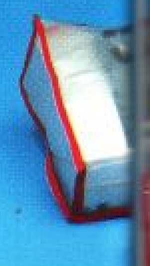
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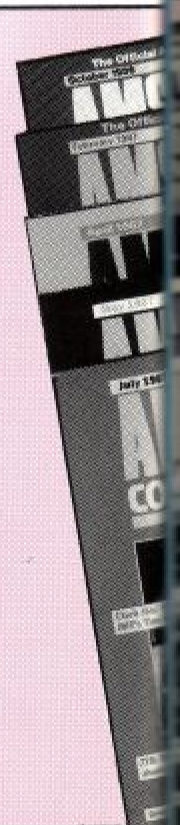
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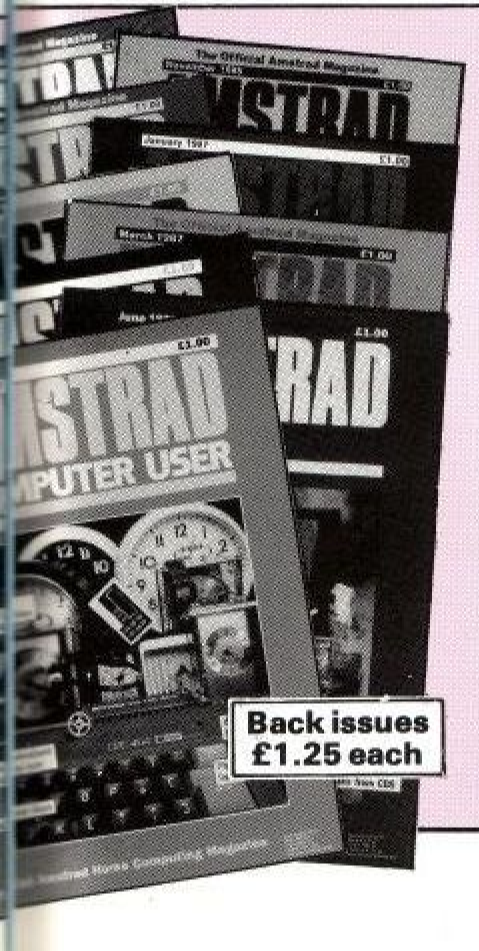
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The Least Significant Bit

Rainbird Mouse

IT rather dents prestige when you discover that the country's poshest software house has a rodent problem. British Telecomsoft has smart West End offices with water coolers, a Macintosh on every desk and mice. Not the sort of mice with two buttons and a rubber ball, but the kind that have whiskers and a tail.

So when you find that your copy of the advanced art studio has been nibbled at you know the mice have an artistic bent. There are two of them, obviously Rainbird compatible, and so the staff has leapt into action and given the furry fiends names. The brown one is called AMX, and the grey one Kempston.

Euro ruling software liability causes death

LAWS are peculiar things. For instance, did you know that it is illegal to whistle in Burlington Arcade? I hope I don't lose my keys next time I pop into S Fisher for a jumper. The laws which come from Brussels are even more peculiar. One ruling prevents software houses from denying responsibility in the event of a bug killing someone.

Now that makes sense in the case of a computer-controlled robot. It may well be the programmer's fault if the shop steward ends up spot welded to a Fiat Strada, but the law is bunk when it stipulates all software.

This is evident in the LocoScript 2 manual which says that Locomotive cannot be held responsible for the result of a bug, except in the case of death. How could LocoScript 2 kill someone? You could have died waiting, I suppose.

LS2 beats Z88

NO, that's not fair. OK so LocoScript 2 was due out in April, but then so was the Z88. Well, the first customers now have the goods, but Locomotive beat Cambridge, by two days in a three-month race and that's not much to write home about. The surprising thing is how good they are. Knowing how panicky both companies must have got, you'd expect short cuts to have been made. Not at all, they both seem really greeeet.

Screwdriver party

JEZ San, author of Starglider for the ST and Amiga, friend of the editor and general computer person, received his Z88 a week early and brought it into the *ACU* office.

Now none of us journalist types were allowed to look at the latex-layered beast because Jez had signed a form which forbade him from showing the machine to anyone who might write about it. I can't think why, because the one we have seen is very good.

This did not stop half the staff of Amstrad Technical from attacking the black beast with the Hairy Hacker's Swiss Army knife to find out what makes it tick. They were moderately impressed, and recognised many bits as being close to the Spectrum in design.

ADVERTISERS' INDEX